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ABSTRACT

The main service of this project involves early identification of underdeveloped or abnormal behavior characteristics in the preschool-age child and the initiation of an educational treatment plan which ameliorate the developmental problem. Identification of disabled children is made by the two project diagnosticians in nursery schools and Head Start classes and through referrals from physicians, psychologists, parents, social workers, and community agencies involved with preschool children. Sixty-five children were in the special treatment programs this year. Forty of the more severely disabled were enrolled in one of four special daily classes and received prescribed instruction from two teachers assisted by two aides. The other 25 received training at home from their parents under the supervision of the diagnosticians. Diagnosis involves attention to four syndromes which provide a broad base for interpreting a child's deficit behavior. The syndromes include the visual perception functions, the visual motor functions, and all aspects of auditory function which primarily affect speech and language capabilities. The data indicate that the program has had beneficial effects. Children have gained in IQ scores and show good progress in readiness scores at the end of kindergarten. First-grade achievement scores were lower than readiness prediction, indicating that the children are losing ground once intensive treatment has ceased. Teachers' reports show gains in performance on tasks associated with learning disabilities, and parent questionnaires showed highly favorable opinions of the program. (Author/KM)

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ESEA Title III Project No. 72-0014

Focus on Preschool Developmental Problems

Thomas Hockman, Project Director

FINAL EVALUATION REPORT
1971-1972

COLORADO SPRINGS PUBLIC SCHOOLS
El Paso County District No. 11
1115 North El Paso Street
Colorado Springs, Colorado 80903

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COLORADO SPRINGS PUBLIC SCHOOLS

FOCUS ON PRESCHOOL DEVELOPMENTAL PROBLEMS

Title III
Elementary and Secondary Education Act
Project No. 72-0014

FINAL EVALUATION REPORT
1971-72

PS 006566

Division of Instructional Services
Department of Special Education
Thomas Hockman, Project Director
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Summary

The main service of this project involves early identification of under-developed or abnormal behavior characteristics in the preschool age child and the initiation of an educational treatment plan which can molify the developmental problem.

These problems, intercepted early, can be negated or alleviated sufficiently to enable many children to make normal progress in later school years. If allowed to prevail, they compound themselves and become increasingly difficult and costly to treat.

Identification of disabled children is made by the two project diagnosticians in nursery schools and Head Start classes and also through referrals from physicians, psychologists, parents, social workers, and community agencies involved with preschool children.

Sixty-five youngsters were included this year in the special treatment programs. Forty of the more severely disabled children were enrolled in one of four special daily classes and received prescribed instruction from two teachers assisted by two aides. The other twenty-five children received training at home from their parents under the supervision of the diagnosticians.

Diagnosis involves attention to four diagnostic syndromes which provide a broad base for interpreting a child's deficit behavior. The syndromes include the visual perception functions, the visual motor functions, and all aspects of auditory function which primarily affect speech and language capabilities. Treatment varies according to the manner and degree of the child's impairment.

The data indicates that the program has had beneficial effects. Objective test data generally show results consistent with the theory under which the program is operating, with students in different categories experiencing differential gains. Children have gained in IQ scores and show good progress in Readiness scores at the end of kindergarten. First grade achievement scores were lower than readiness prediction. It would appear that the children are losing ground once intensive treatment has ceased.

Teachers'reports show gains in performance on tasks associated with learning disabilities and that the children perform slightly below average on most classroom tasks. Factor analysis of teacher ratings on these children yielded three useful factors: an academic factor, a speech factor, and a social factor. Six variables loaded on the academic factor which appears to be a valid predictor of standardized achievement and readiness scores.

Parent questionnaires showed highly favorable opinions towards the program.

THE CONTEXT

— Locale
— School System
— Needs Assessment
— Historical Background

The Locale

The Focus on Preschool Developmental Problems Project serves children from El Paso County School District Number 11 encompassing the city proper of Colorado Springs, Colorado, and also children from districts in the surrounding area. The city is located just east of the Rocky Mountains at the foot of Pikes Peak. It is 67 miles south of Denver and 42 miles north of Pueblo on Interstate Highway 25. U.S. Highway 24 passes east and west through the city.

Colorado Springs is the second largest city in the state and is experiencing rapid growth. The population of the city proper on January 1, 1972, was 155,000 while the population of the metropolitan area was 247,027. In January 1972, the United States Office of Labor ranked Colorado Springs as the sixth fastest-growing city of over 100,000 population in the United States. In June 1972, Sales Management Magazine, using U.S. Labor census figures, ranked Colorado Springs as the number one fastest growing city over the past 20 months (from October 1970 through June 1972).

A large segment of the Colorado Springs economy revolves around the three major military installations in the area: Fort Carson, Ent Air Force Base (including the North American Air Defense Command and Peterson Field), and the Air Force Academy. In addition to the more than 37,000 military personnel assigned to these installations, they provide employment for about 16,000 civilian residents. Many other jobs have been created in the community by firms providing goods and services to these installations and their employees.

Light industry is another important factor in the economy of the region. There are more than 400 industries in the area including Hewlett-Packard, Ampex, Kaman Nuclear, Western Forge, Inc., Red Wing Wood Products Company, Denver Equipment Company, and Systems Development Corporation. A very active construction industry exists due to the increasing need for private homes and the growing business activity in the area.

Tourism is a third major source of economic activity in the region. Numerous hotel-motel, dining, sightseeing, and excursion businesses provide employment for local residents. Many national, regional, and state conventions are held annually in the area using the facilities of the Broadmoor Hotel and the Antlers Plaza Hotel.

Colorado Springs is served by three airlines: Continental, Braniff, and Frontier.

The Colorado School for the Deaf and Blind, a state institution, is located in Colorado Springs.

Continuing and higher education opportunities are afforded through Colorado College, University of Colorado Cragmor Center, Blair Business College, Midwest Business College, and the recently established El Paso Community College. The school district operates an extensive adult education program including Adult Basic Education.

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The School System

The Colorado Springs Public Schools, District Number 11, had an enrollment of 34,270 pupils in kindergarten through grade 12 in the 1971-72 school year. The system has been faced with an annual increase of about 1,600 pupils in recent years. The rapid growth of the school district in recent years can be readily seen in the following figures. In 1911 there were 6,000 pupils in 15 schools; in 1951 there were 9,000 pupils in 17 schools; in 1961 there were 20,000 pupils in 31 schools; and in 1971-72 there were 34,270 pupils in 48 schools.

The district's 35 elementary schools (K-6) enrolled 19,161 pupils, 9 junior high schools (7-9) enrolled 8,424 pupils, and 4 comprehensive senior high schools (10-12) enrolled 6,594 pupils. Forty-eight pupils were enrolled in the Educational Opportunity Program and 43 pupils were enrolled in the Orthopedically Handicapped program.

Special Education programs offered by the school district include classes for the Educable Mentally Handicapped, Educationally Handicapped/Hospital Tutoring, Physically Handicapped, Aurally Handicapped, and Speech Correction.

The last three bond issues (1962, 1967, and 1970) were successful. Annual per-pupil expenditures, exclusive of federal funds, for the three preceding fiscal years ending June 30 were: 1969 = $601, 1970 = $694, and 1971 = $866.

Needs Assessment

No formal needs assessment was made since the number of referrals to the district's Special Education Department from the school-age population over a period of many years has established that developmental abnormalities are present in a substantial number of children before they enter kindergarten. This is confirmed by reports of research and other studies by numerous professionals in medicine, psychology, psychiatry, and education.

Historically, the preschool child has not been a concern of the public school. Only the medical practitioner would perhaps have had opportunity to identify some developmental abnormality in the young child, and his prescription could not well have included appropriate educational treatment. Consequently, most developmental problems have gone untreated and, for the most part, unrecognized until after the child has entered school and experienced difficulty or even failure. At this time with the problem compounded by emotional stress, educational treatment has much less chance of success and is not always within the financial ability of a public school system to establish and maintain. This project, therefore, represents an effort to identify these problems early through referrals from pediatricians and others having contact with preschool children and to provide an appropriate educational treatment program.

Historical Background

The availability of ESEA Title III funds for the support of innovative programs for the education of the handicapped encouraged Mr. Thomas Hockman, Director of Special Education, to propose formally the establishment of a program to identify and begin the treatment of developmental abnormalities before the affected children entered school and were confronted with tasks they could not successfully perform. An informal survey of community agencies and medical specialists

resulted in an unanimous expression of interest and support for the proposed program.

The diagnostic plan, or rationale, which is the basic feature of the program, is not new. It had been used by Mr. Hockman since 1963 on a limited, experimental basis. It was used also in an itinerant teaching program for two years with school age children who had serious learning and behavior problems and also with ten pre-school age children and parents.

The theoretical rationale upon which the educational diagnosis and teaching plans are based outlines four sensory-neural systems that are vital to intellectual development. The deficit behavioral symptoms that can be observed form the syndrome for each of these systems. The syndromes of impaired developmental function are outlined briefly below.

Visual-Motor Disability: An impairment in this system interferes with the child's ability to perform tasks that require visual guidance of the hands. This includes feeding and dressing, manipulation and construction activities, and coloring and writing. The child is also impaired in the ability to perceive pure form or geometric shape and to perform tasks involving the relationships of form.

Perceptual Blindness: This type of impairment interferes with the child's ability to give close and accurate visual attention to the details of visual stimuli and to develop an adequate visual memory of these stimuli. These children tend to be hyperactive and display poorly developed fine visual-motor skills.

Word Sound Deafness: An impairment in this auditory system interferes with the specific functions of sound discrimination, speech articulation, and auditory memory. Thus, the child cannot experience normal general language development.

Language Meaning Disability: An impairment in this system interferes with the child's ability to derive full meaning from language. Although the child is usually very verbal with a good auditory memory and clear articulation, he cannot relate realistically to his environment, especially to the people in it, because of his inability to understand human feelings and emotion through the medium of language. He, therefore, has difficulty participating successfully in group activities and in maintaining friendships.

A complete description of the behavioral characteristic symptomatic of the above developmental problems is presented in Appendix A and B of the second Continuation Proposal submitted May 1, 1971. A description of treatment methods is also presented on pages 7-9 of this same proposal.

THE PROGRAM

— Scope
— Personnel
— Organization
— Activities and Services
— Equipment and Materials
— Parent-Community Involvement
— Budget

Scope of the Program

Specific objectives of the program are (1) to make a differential diagnosis of the developmental abnormalities in children who are three through five years of age and (2) to initiate an educational treatment program that will enable the child to overcome the effects of these developmental problems.

Participating children come primarily from a population of approximately 1,000 children enrolled in the Head Start Program and in nursery schools through the community. Others are referred by professional disciplines concerned with preschool age children. In a few special cases a kindergarten child has been referred by the elementary school principal. Of the seventy-one children referred this year, six were referred from the Head Start Program, seven from kindergarten classes, twenty-three from nursery schools, nine from the Rocky Mountain Rehabilitation Center, one from other agencies and twenty-five by parents. These children came not only from Colorado Springs proper but also from the districts in the surrounding area. The number of children in each age group who were enrolled in the special classes were as follows:

3 years = 10
4 years = 18
5 years = 13
6 years = 5

The age classification for the 1971-72 school year represented a higher concentration of younger children this year when compared to last year even though 25 children were carried over from the 1970-71 classes. In 1970-71, 62% of the participants were from 5-7 years of age with only 38% in the 3-4 year range compared to 39% ages 5-6 and 61% ages 3-4.

Twenty-four children were enrolled in the home program for the 1971-72 school year. There were 4 five-year olds, 16 six-year olds, 2 seven-year olds, and 2 eight-year olds. Seven children left the program. One was withdrawn and six moved out of the area. The total number of pupils consisted of 53 boys and 18 girls.

Organizational Details

This report covers the final year of a three-year experimental project. The project is housed in three classrooms of the Stratton Elementary School Annex, 2460 Paseo Boulevard, Colorado Springs, Colorado. These rooms were carpeted to reduce noise. Two rooms are used as classrooms and the third was remodeled to provide offices for the diagnosticians, the psychologist, and a reception area for parents, children, and visitors.

Authority and responsibility for the project is vested in the project director, Mr. Thomas Hockman, Director, Special Education Department, School District No. 11. He is responsible, in turn, to the Director, Special Services Division. A chart depicting the organizational relationships of those directly responsible for the project is presented in Appendix A.

In the first project year training of staff personnel was conducted on a full-time basis for the first six weeks. The educational diagnosticians received intensive training from the project director in the use of the rationale. In addition, the diagnosticians observed several demonstrations of the educational diagnostic procedures and then themselves conducted several practice diagnoses. They were also introduced to methods of parent counseling.

Concurrently, the teachers were involved in a less intensive training program since they receive general teaching direction from the diagnostician. They participated in many of the daily sessions, became familiar with materials, and observed several diagnoses. They also spent a considerable amount of their time preparing instructional materials which would be compatible with all aspects of diagnosis.

The training is an ongoing process. Weekly staff meetings are devoted to solving diagnostic and teaching problems as they arise with the children. Teacher aides were not included in the initial training program; however, by working closely with the teachers and participating in the weekly staff meetings, they have become competent to carry out the instructions of the teacher.

Personnel

Diagnostic Personnel

Two full-time educational diagnosticians are the key persons in making the diagnosis of developmental problems and in formulating the treatment plan for the classroom and the home. One of the diagnosticians serves as assistant project director. Both diagnosticians were selected from the district's Special Education teaching staff. Both have a master's degree and received inservice training in the diagnostic rational from the project director.

One part-time school psychologist performs initial and follow-up comprehensive psychological evaluations and makes recommendations for referral to other professional services and agencies when necessary. He has had advanced training in clinical methods and has had many years of experience in the evaluation of young children as a member of the district's Department of Pupil Accounting and Testing.

Classroom Personnel

Two full-time special education teachers were employed for the project. They carry out the classroom treatment plan as formulated by the diagnosticians and provide continuous feedback to the diagnosticians as to the progress of each child. They also participate in the development of new instructional strategies for treatment purposes. Neither teacher had prior experience, but both had special college training appropriate for their project duties. Both received inservice training from the project director.

Two full-time teacher aides work with children under the direction of the teachers in special class activities and assist in the preparation of materials for class activities.

Supportive Service Personnel

One part-time social worker provides follow-up assistance to project children upon request. These services represent a district contribution to the project.

One part-time research consultant assists the project director in planning the evaluation design, coordinating the collection of evaluation data, analyzing data and writing evaluation reports. This person holds a doctorate and is the director of the district's Department of Research and Special Studies.

One full-time secretary provides clerical assistance and serves as a receptionist.

Administrative Personnel

The Director of the Department of Special Education provides overall direction for the project. During the initial project year, he devoted half time to the project. He conducted the initial inservice training for the project staff. He has had several years experience as a teacher of the educable mentally handicapped and as a speech correctionist. He has had twelve years of administrative experience in all areas of Special Education and has completed the major part of a doctoral studies program at the Catholic University of America in Washington,D.C.

One part-time coordinator of special projects assists the project director in writing and assembling project renewal applications, providing liaison with the Colorado Department of Education, preparing dissemination materials, managing the project budget, maintaining an equipment inventory, and compiling project evaluation reports. He holds a master's degree and has had seven years experience as a coordinator of special projects.

Activities

The main service of the project is to initiate an identification, educational, diagnostic and treatment program for preschool children whose lagging or abnormal development may cause learning disabilities and emotional disturbances in school.

The main activities of this project are designed to modify the developmental behavior characteristics of preschool age children when these characteristics are determined to be underdeveloped or abnormal.

The identification of children is carried out in Head Start classes and the nursery schools in the community. The diagnosticians visit these classrooms and identify the children who display developmental problems by observing their coloring and cutting work, observing them playing, having them perform simple visual and auditory tasks, and obtaining information from their teachers. Other children are referred by physicians, psychologists, parents, social workers, and agencies such as the Rocky Mountain Rehabilitation Center and El Paso County Exceptional Children's Clinic.

The diagnosis includes medical, psychological, social and educational factors. However, the rationale of this project is primarily of an educational nature, and the purpose of the diagnosis is to prescribe an educational strategy. (See Appendix B for a description of the methods the diagnosticians use to determine the nature and extent of a developmental problem).

Provision for treatment is of two orders: (1) The parent whose child is but mildly disabled is trained and further supported by the diagnostician in carrying out a home treatment program. (2) The more severely disabled child and the child whose parents cannot provide training at home for one reason or another is enrolled in a special class and receives instruction from the specially trained teacher and an aide. The parents are also trained to carry on a home treatment program to the extent possible for them.

Two morning and two afternoon classes are scheduled to provide training for forty children, a maximum of ten per class. Within the classes children are

grouped for a portion of the two-hour period according to disability which allows employment for those methods particularly suited to overcome that disability. For example, children with visual-motor problems are involved in tactile-kinesthetic activities which include puzzles, zipping and buttoning clothing, and assembling objects. In these activities visual guidance is minimal. In the case of perceptual blindness, the child engages in activities requiring close visual attention such as assembling tinker toy and block models, cutting, and coloring. Children with word-sound deafness are taught to lip-read which enables them to gain a visual picture of the sounds that are difficult to discriminate auditorily. Various lip reading games are employed to help them learn this skill. Then, stories recorded on tape are used to develop word-sound associations. With language-meaning disabilities, care is taken to avoid use of words which would frustrate a child through his inability to understand them. Concrete words are presented at first, and later, more abstract words are introduced. Pictures are used in these activities to help the child form word-meaning associations. In both of the auditory disabilities, amplified sound is an effective means of developing appropriate associations of sound or meaning.

A large group activity is always included in the daily exercises primarily to provide another kind of social experience. At this time the two classes are combined, and the children work in developing concepts of quantity, shape, size, and color.

Other individual and/or group activities develop listening skills, coordination skills, ability to follow directions, and reading readiness (for those of school age). Daily schedules also include time for directed indoor and outdoor play. An example of a daily schedule follows.

SAMPLE- CLASSROOM SCHEDULE OF ACTIVITIES

Daily Schedule - A.M. (Ages 3 & 4)

9-9:30 Individual activities

Disability-Word Sound Deafness
Activity- Language master - Child repeats sentences on tape and listens to own voice for improvement of auditory memory and articulation.

Disability-Perceptual Blindness
Activity- Child matches colored pegs to pattern on lite-brite for visual discrimination.

Disability-Visual-Motor
Activity- Child is blindfolded and allowed to cut paper. Guidance scissors are used so child learns feeling of correct cutting motion. Children not involved in these activities are given puzzles to work or models to copy. Groups are rotated as necessary according to each child's disability.

9:30-9:40 Group - Sharing time, helpers-count children, fix calendar and weather chart.

9:40-9:50 Action game - Policeman and lost child- Child who is policeman must listen to physical description of another child and then find the "lost" child.

9:50-10:00 Disability - All
Activity- Lesson from Peabody Language Development Kit. Children listen to recorded story of "P. Mooney and Mr. Nobody". This is concerned with the teaching of body parts and their spatial relationships. It is, also, used for language development and the improvement of auditory memory.

10:00-10:20 Recess- Large motor activities outdoors
10:20-10:40 Snack and story
10:40-10:50 Finger plays or songs using the autoharp
10:50-11:05 Large group activities with both classes - Musical chairs, Who's Missing, etc.
11:05-11:20 Art Activity - Cutting shapes and pasting them on matching outlines, finger paint, make paper chains from strips of paper
11:20-11:30 Supervised free play

Daily Schedule - P.M. (Ages 5 & 6)

12:45 - Juice and supervised free play

1:00 - Greeting and talk time for speech and language development.

1:10 - Harper & Row Basic Reading Program
Lesson plans include: Picture, story, color-interpretation, making relationships, auditory discrimination, visual discrimination, story sequence, word/picture association, classification

1:25 - Movement and Rhythm
Learning activity - The ability to move one's body in coordinated response to music.

1:30 - Individual and concentrated activity to meet disability need:
Disability - Perceptual Blindness
A. Activity - Counting and stringing beads - color matching, counting, numerals and sequential order.
B. Activity - Rubber Geometric Shapes - Shape recognition, manipulation, size discrimination, tracing around shapes.

Disability - Word Sound Deafness
A. Activity - Amplified sound-Language Development Lessons - Develop auditory memory, sound discrimination, attention span and develop listening skills.
B. Activity - Controlled reader - To quicken word/picture experience association. Develop ability to hear similarities in the way words begin, articulation and word response.

Disability - Language Meaning
A. Activity - Flannel Board Stories - Real stories using a lot of expression, teach the child to use language in an acceptable way.
B. Activity - Sequential Picture Cards - Used to encourage meaningful language in response to a picture.

Disability - Visual Motor
A. Activity - Hidden toys and materials - Tactile discrimination, child feels hidden objects and can match, classify, differentiate weights and discriminate temperatures.
B. Activity - Dressy Bessy Doll - Small muscle coordination, teaches a practical skill, develops eye and hand coordination

2:00 - Recess - Large motor activities outdoors

2:20 - Snack

2:30 - Large group (both classes) Cuisenaire Rods (Math Readiness)
Size and color seriation, vocabulary, equivalence counting, later fractions of sets, building, stacking, balancing, matching and arranging.

2:40 - Language Development -
Peabody Language Lessons to stimulate the receptive, associative and expressive components of oral language development.

3:00 - Art-
Pasting, cutting, etc. - learning to handle many kinds of media

3:20 - Story

3:30 - Dismissal

Equipment and Materials

The following lists of materials and equipment were required for the program and were key aids used in connection with both diagnostic and instructional activities.

Materials used to help children overcome visual-perceptual disabilities are: Tri-Kit, puzzles, Tupperware form balls, Peabody Language Development Kit-Level P, unit blocks, pegboards, Lego sets, tinker toys, beads, number sorters, parquetry blocks, nest of eggs, lacing boots, lotto games, stacking disc set, rocking boats, Lincoln logs, mix and match blocks, discriminiation cards, and Harper & Row Readiness sets. These materials are used primarily to determine a child's ability to use his eyes effectively. Different materials may be more appropriate for one child than for another. For example, if a child suffers deficit behavioral symptoms in the visual-motor area, the materials employed would be those that will enable him to develop an alternative approach, e.g. tactile-kinesthetic, by which he may be able to learn. On the other hand, if he demonstrates lagging visual skills in a structured diagnostic situation, he is given further training with appropriate materials in tasks that teach him to use his eyes habitually to observe fine detail and improve visual memory.

Materials and aids used to help children overcome auditory-perceptual disabilities are: tape recorders and listening stations for amplified sound and listening, Peabody Language Development Kit-Level P, record players, Judy Family and Community Helper sets, and Harper and Row Reading Readiness sets.

This Spring the project teachers were asked to evaluate each of the materials used in the program, their evaluation follows:

Disability: Perceptual Blindness

Method: Forcing to Look Closely

Purpose: Visual Concentration, Fine Motor Coordination, Visual Memory, Decrease Hyperactivity

Success Factor: S=Satisfactory, VS=Very Satisfactory, NS=Not Satisfactory

Materials	Activity	Success Factor
1. Colors and objects	Play "What's Missing"games	VS
2. Stacking discs	Place in ascending order on peg	NS
3. Lego blocks	Copy models	VS
4. Crystal Climbers	Copy models	VS
5. Unit blocks	Copy models	S
6. Snap blocks	Copy models	S
7. Tinker toys and toymaker	Copy models	S
8. Beads	Follow patterns	VS
9. Pegs	Follow patterns	VS
10. Lite-Brite	Follow patterns	VS
11. Puzzles	Putting together	S
12. Parquetry blocks	Matching shapes	VS
13. Bucket of Fun Color Game	Discrimination, recognition	VS
14. Color patterns	Copy sample	VS
15. Number boxes	Put in sequential order, Correspond items to numeral counting	S
16. Dominoes- Pictures, dots	Matching	S
17. Play-dough with number cards	Forming play dough balls to correspond with numerals	S

Perceptual Blindness (Continued)

18.	Number sorters	Fitting holes on correct pegs	S
19.	Rubber numeral footprints	Number recognition games	VS
20.	Magnetic fishing pole	Fishing games with numerals, words, letters	VS
21.	Language master-words, colors, shapes, numerals	Recognition	VS
22.	Chalkboard	Copying activities	VS
23.	Magnetic numerals and letters	Recognition	S
24.	Tracing worksheets	Tracing	VS
25.	Mazes	Control crayon through maze	S
26.	Lotto games	Matching	VS
27.	Letter, numeral, and word cards	Matching	VS
28.	Small discrimination cards	Matching	S
29.	Flash cards	Recognition	VS
30.	Reading sets	Recognition	VS
31.	Same and different worksheets	Identify	VS
32.	Dot-to-dot worksheets	Connect numbered dots to make pictures	S
33.	Picture alphabet	Association, recognition	S
34.	Bingo	Recognition	S
35.	Rods and spools	Patterning	S
36.	Counting Board	Number concepts	VS
37.	Mix 'n Match Blocks	Put four separate pieces together to form complete picture	VS
38.	Try Kit	Matching	NS
39.	Cuisenaire Rods	Matching, play number games building with rods	VS
40.	Sequential Cards	Place in proper sequence to tell story	S

Perceptual Blindness (Continued)

41.	Completion worksheets	Fill in missing parts	S
42.	Harper and Row Workbooks	Discrimination, looking, recognition	S
43.	Peabody Kit	Looking, matching, patterning, word picture association	VS
44.	Wooden study carrel	Cut out distractions	S

Disability: Language Meaning

Method: Use of Concrete Materials in Developing Meaningful Communication, at Times with Amplified Sound

Purpose: Decrease Incessant Talking, Decrease Mimicry, Expression of Emotions, Relating Socially, Voluntary Meaningful Speech

	Materials	Activity	Success Factor
1.	Peabody Language Development Kit	Pantomiming, word picture association	VS
2.	Songs and fingerplays	Singing and dramatizing	VS
3.	Color plates	Matching and identifying colors	VS
4.	Language master	Learning the meaning of words	VS
5.	Spatial relationship cards	Using language to express spatial relationships such as in, on, under, etc.	VS
6.	Controlled reader	Identifying and describing pictures	VS
7.	Flannel board stories	Teacher tells story, then children retell it	VS
8.	Sequential picture cards	Using language in response to a picture, placing cards in sequential order	VS
9.	Magnetic alphabet letters and numbers	Forming words, placing numerals in sequential order	S
10.	Woodén road signs	Playing with cars and trucks, learning to read signs	NS-w/ 3 yr. S-w/ 5 yr.
11.	Harper & Row Workbooks	Identifying and describing pictures, learning the meaning of words, word picture association	S

Disability: Word Sound Deafness

Method: Amplified Sound, Lip Reading

Purpose: Articulation, Auditory Memory, Attention Span, Language Development, Auditory Discrimination

Material	Activity	Success Factor
1. Peabody Language Development Kit	Conversation, following directions, rhyming, listening describing, sentence building	VS
2. Tape recorder	Follow directions, listen with amplified sound	VS
3. Language master	Repeating words and sentences, record own voice	VS
4. Stories	Listening, recall of story content	VS
5. Record player	Follow directions, listening	VS
6. Lotto	Use sentences, word picture association	VS
7. Controlled reader	Use sentences, word picture association	S
8. Songs and nursery rhymes	Memorizing	S
9. Harper & Row Workbooks	Listening, follow directions conversation, use of sentences	S
10. Spatial relation cards	Learning directional words	S
11. Picture and word cards	Describing	VS
12. Counting board	Counting	S

Disability: Visual Motor

Method: Tactile Kinesthetic Guidance

Purpose: Copying Movements, Manipulating, Constructing, Decrease Lethargy, Motoric Coordination

Material	Activity	Success Factor
1. Zippers and buttons	Child blindfolded	VS
2. Balls	Throwing and catching	S
3. Rocking boat and steps	Development of large motor skills	VS
4. Tricycle and Krazy Kar	Development of large motor skills	VS
5. Bean bag toss	Development of large motor skills	S
6. Activity records	Copying movements	VS
7. Tupperware ball	Child blindfolded	S
8. Puzzles	Child blindfolded	S
9. Playground equipment-swings, slide, and jungle gym	Development of large motor skills	VS
10. Finger plays and action songs	Copying movements	S
11. Spinning top	Manipulation	NS
12. Large lego blocks	Assemble models for manipulation	VS
13. Templates	Child blindfolded	S
14. Geometric shapes	Identify by feel	VS
15. Unit blocks	Assemble models for manipulation	S
16. Crystal climbers	Assemble models for manipulation	VS
17. Beads	Manipulation	VS
18. Lite-Brite	Manipulation	VS
19. Dapper Dan and Dressy Bessy	Manipulation	VS

Visual Motor (Continued)

20.	Spinning Sparkler	Manipulation	S
21.	Number pegs	Manipulation	S
22.	Snap blocks	Assemble models for manipulation	S
23.	Pegs	Manipulation	VS
24.	Sandpaper shapes, letters and numerals	Blindfold child and have him trace with finger.	S
25.	Chalkboard, crayons		
26.	Small lego blocks	Assemble models for manipulation	NS-w/ 3 yr. S -w/ 5 yr.
27.	Tinker toys and toymaker	Assemble models for manipulation	NS
28.	Lincoln logs	Assemble models for manipulation	NS
29.	Lacing cards	Manipulation	NS- w/ 3 yr. S - w/ 5 yr.
30.	Weaving mats	Manipulation	NS-w/ 3 yr. S - w/5 yr.
31.	Peabody Kit (color chips)	Manipulation	VS
32.	Cuisenaire rods	Manipulation	VS
33.	Wooden merry-go-round	Manipulation	NS
34.	Rods and spools	Manipulation	S
35.	Counting Board	Manipulation	VS

Parent-Community Involvement

The Parent

Because parents play a major role in the treatment plan, they are closely involved in all procedures. They are present during administration of the first diagnostic tests and watch the diagnostician as he strives to elicit positive responses from the child. For example: If the child is found to have a weak auditory memory and poor articulation, amplified sound and lip reading can be attempted immediately to determine if this enables the child to respond more favorably. The child's reaction gives clues as to the accuracy of the diagnosis and an indication of the teaching methods that will prove most effective. By observing this examination the parent gains an appreciation of the child's problem and an understanding of the behavioral improvement possible. Thus, this involvement becomes the basis for developing the strong, active parental support necessary for the child's continued improvement.

Another parental conference is scheduled without the child so that the findings of the diagnostic evaluation and the teaching plan can be discussed in detail. At this time the diagnostician gives the parents a thorough explanation of the child's behavior and instructs the parents in the teaching methods to use with their child at home. The diagnostician then meets at weekly intervals with the parents to assure that problems receive immediate attention and that parental efforts meet with success. Later, as progress is firmly established, these meetings become less frequent.

The parents of the Preschool Project pupils assured continuation of the project by again appearing before the Board of Education of School District #11, and convincing them of the need for this type of a special program for the 1972-73 school year.

Mrs. Stephanie Hendren, Chairman of the parents' group, has been very influential in leading the parent group towards their goal of continuing the project. She also was quite involved in the El Paso County Association of Children with Learning Disabilities and participated on a panel during an ESEA Project Directors' Meeting.

The parent program has proven effective with families from all socio-economic and educational levels. Total involvement has enabled parents to develop realistic and positive hopes for their child, improved attitudes towards medical and educational specialists, and willingness to accept further assistance from professional people.

The Community

The community has been informed through newspaper releases in the two local newspapers which in turn brought about referrals from interested parties. On April 20, 1972, the lead page of the Colorado Springs Sun "Local Action" section was devoted to the Preschool Project with pictures of children in action and a feature story by Mrs. Diane Wengler, education feature writer. The philosophy, goals and activities of the project were described in the article.

A slide-tape presentation has also been developed and through presentations to community groups and interested individuals, referrals have been made. A newsletter explains important facets of the program and presents program news highlights. This newsletter is distributed to all District #11 personnel, Colorado Department of Education personnel, advisory committee members, Head Start program and nursery school personnel in the area.

Advisory Committee

An advisory committee serves to facilitate the communication of information to interested members of the community. This committee is made up of professional people, agency representatives, and parents. It met three times annually for the first three years with the project staff and serves as an overall steering group for the project. For the 1971-72 year, the committee only met once. Composition of the committee is specified in Appendix C.

Budget

Project costs for the second year totaled $69,625. Of this amount, $59,300 were ESEA Title III funds, $9,498 was State Special Education reimbursement, and $827 was local contribution.

The breakdown of Title III expenditures includes $37,072 for professional salaries, $11,579 for nonprofessional salaries, $6,067 for employee benefits, $1,627 for materials and supplies, $170 for telephone service, $788 for travel, $1,188 for pupil transportation, and $269 for duplication expense.

The average cost per pupil amounts to $1,071; however, because this project utilizes a dual approach, two per pupil costs are in order: one for those enrolled in special classes and another for those enrolled in the home program. The per pupil cost for the former was about $1,225, for the latter, $825. In a nonexperimental program, these costs would be less since the expense for such items as dissemination,printing, and travel would be eliminated or greatly reduced.

The final project expenditure report appears in Appendix G.

THE EVALUATION

— Objectives
— Participants
— Measuring Changes
— Data
— Findings

Objectives

A. General Objectives

1. To modify the developmental behavior characteristics of preschool and primary age children in cases where these characteristics are determined to be underdeveloped or abnormal. Children who suffer vision or hearing deficiency, physical disabilities, emotional disturbances, or speech defects will participate.

2. To reduce significantly the incidence and severity of cases of learning disability and abnormal behavior which, if allowed to prevail, could seriously hamper academic function and school adjustment.

B. Specific Objectives

1. To identify children who have developmental problems.

2. To identify specific problems involving the development of motor, visual, and auditory skills.

3. To establish a special classroom intervention plan that will improve the child's functional skills in the areas of identified disability.

4. To teach parents to understand their child's developmental problem in terms of how it affects his functioning so that they will be more effective in rearing the child.

5. To teach parents to recognize changes in the functional development of their children in the areas of attitudes, skills, and responsibility.

6. To teach parents how to provide a home intervention program that will improve the child's functional skills.

7. To identify the developmental factors associated with academic learning disabilities when the child reaches the primary grades.

8. To coordinate center efforts with those of the regular classroom teacher to assure that the handicapped child will receive sufficient individual support to make satisfactory progress in school.

Participants

The project diagnosticians identify eligible children from among the approximately 1,000 youngsters attending nursery schools and Head Start classes. This is achieved through consultation with the teachers, through observation, and by employing simple tests. An identification scale (See Appendix D) is utilized by nursery school personnel and others making referrals to assist them in identifying children with developmental problems. Parents are apprised that their child appears to be handicapped by a developmental problem and are offered the opportunity to include their child in the program. Parents of mildly handicapped children are trained by the diagnosticians to assist their children at home while more severely handicapped children are placed in special classes and receive training from a teacher and an aide. These children are also assisted at home by the parents. Experience thus far has shown that parental cooperation is best gained when initial contact is made by nursery school or Head Start personnel rather than by project staff. It has also been found that full cooperation is more apt to come from parents whose child is enrolled in nursery school than from those involved in the Head Start program. Other children come to the program via referrals from physicians, psychologists, social workers, parents themselves who know of the program, and from community agencies concerned with preschool age children.

For the 1971-72 school year, there were 71 children enrolled in the Preschool Project program.

Special Classes	Home Program
3 years old - 10	5 years old - 4
4 years old - 18	6 years old -16
5 years old - 13	7 years old - 2
6 years old - 5	8 years old - 2

Thus far 7 children have left the program during the 1971-72 school year. One was withdrawn, and 6 moved out of the area.

The 71 children represented 53 boys and 18 girls. The ratio of boys to girls was 3.9 to 1 which was considerably more than the 5:3 ratio of 1970-71, but still less than the 5:1 ratio of 1969-70.

All socio-economic levels are represented with none in predominance. Although some children are from military families, the majority of the families are civilian.

Measuring Changes

The evaluation data for this project consists of both process and product evaluation, with input from parents, teachers, students, and specialized personnel. The data consist of:

1. Pre and Post Individualized IQ Test scores. If the child was sufficiently old enough, the Wechsler Pre-School and Primary Intelligence test was given (WPPSI), and both the Verbal and Performance IQ scores are reported in addition to the Full Scale IQ score. If the child was too young to take the Wechsler Intelligence Test, he was administered the Stanford Binet Intelligence Test, with the resulting score being the full-scale Intelligence score. For analysis purposes, the Full Scale Wechsler IQ scores were equated to the full scale Stanford Binet scores, as the means are equal and the standard deviations differ by only one point.

2. Metropolitan Reading Readiness Test scores for children enrolled in kindergarten. The tests were given in May near the conclusion of the project year. The tests are considered posttests only.

3. Metropolitan Achievement Test scores for children enrolled in the first grade. These students are enrolled in various first grade classes throughout the district. While they are not enrolled "full time" in the preschool project, they are often receiving individualized help from a learning disability teacher.

4. Parent Questionnaires were mailed to parents whose children are involved in the project. The questionnaires sought the parents reaction to possible changes in their children's behavior and the parent's judgement on the effectiveness of the program. (See Appendix D for copy of the questionnaire.

5. Teacher Questionnaires were distributed to the preschool, kindergarten, and first grade teachers of children who are project children. The teachers were asked to rate the children in relation to the average they have come to expect in dealing with children. (See Appendix D).

6. Project Teacher Records were kept on a daily, weekly, and monthly basis on each child. The scores are criterion referenced with respect to certain behaviors which have been found useful in the identification and remediation of learning disabilities. The child is subjected to an intensive psychological examination at his entrance into the program and based upon this examination, treatment is prescribed. The teacher records progress made in behaviors specified by the examination. The child is again subjected to an intensive examination at the conclusion of the project year.

   The teachers also rated the parents on the degree of cooperation which they gave to the project.

EVALUATION DATA

Intelligence Test Data

Table I presents the individual pre- and post IQ scores for each of the sixty-five children enrolled in the program.

TABLE I

WECHSLER PRESCHOOL AND PRIMARY SCALE OF INTELLIGENCE PRE- AND POSTTEST RESULTS of 65 CHILDREN IN SPECIAL CLASSES, 1971-72

	Pretest			Posttest			Difference		
S	Verbal	Performance	Full Scale	Verbal	Performance	Full Scale	Verbal	Performance	Full Scale
1	80	86	81	86	93	88	6	7	7
2	--	--	55	70	74	69	--	--	14
3	86	76	79	94	94	93	8	18	14
4	101	118	110	115	127	123	14	9	13
5	--	--	93	89	105	96	--	--	3
6	94	93	93	100	99	99	6	6	6
7	80	73	74	99	94	96	19	19	22
8	87	96	91	111	105	109	24	9	18
9	71	95	81	87	104	95	16	9	14
10	82	77	78	97	96	96	15	19	18
11	--	81	--	85	88	85	--	4	--
12	92	108	100	105	121	114	13	13	14
13	--	99	--	80	114	96	--	15	--
14	101	97	99	117	97	109	16	0	10
15	52	50	46	62	65	60	10	15	14
16	--	88	--	--	118	--	--	20	--
17	82	81	80	115	108	113	33	27	33
18	110	96	104	111	116	115	1	20	11
19	--	--	143	125	131	131	--	--	-12
20	80	70	73	91	85	87	11	15	14
21	--	--	115	130	127	132	--	--	17
22	74	127	99	101	130	116	27	3	17
23	102	84	93	102	101	102	0	17	9
24	--	88	--	96	112	104	--	24	--
25	--	--	124	121	105	115	--	--	-9
26	--	81	--	82	73	76	--	-9	--
27	--	--	96	94	86	89	--	--	-7
28	71	82	74	76	77	74	5	-5	-2
29	64	61	59	66	64	62	2	3	5
30	--	--	119	116	107	113	--	--	-6
31	125	103	116	135	114	127	10	11	11
32	--	--	98	94	99	96	--	--	-2

TABLE I (Continued)

	Pretest			Posttest			Difference		
S	Verbal	Performance	Full Scale	Verbal	Performance	Full Scale	Verbal	Performance	Full Scale
33	85	74	78	80	87	83	-5	13	5
34	85	99	91	95	114	104	10	15	13
35	--	96	--	--	116	--	--	20	--
36	--	--	94	106	95	101	--	--	5
37	64	58	58	74	72	70	10	14	12
38	--	--	105	112	110	112	--	--	7
39	--	--	111	112	119	117	--	--	6
40	--	--	141	117	105	113	--	--	-28
41	67	88	75	75	94	83	8	6	8
42	86	89	86	110	104	108	24	15	22
43	84	72	76	90	89	88	6	17	12
44	--	101	--	--	96	--	--	5	--
45	105	111	109	109	116	114	4	5	5
46	119	114	118	114	123	120	-5	9	2
47	--	--	107	95	103	99	--	--	8
48	76	84	78	104	99	101	28	15	23
49	119	112	117	126	91	110	7	21	-7
50	84	72	76	91	69	79	7	-3	3
51	104	111	108	116	120	120	12	9	12
52	67	85	73	84	93	87	17	8	14
53	102	103	103	115	104	111	13	1	8
54	--	76	--	65	66	62	--	-10	--
55	--	--	90	87	103	94	--	--	4
56	111	110	111	105	107	106	-6	-3	-4
57	84	108	95	97	108	103	13	0	8
58	99	78	88	101	92	96	2	14	8
59	99	96	97	105	108	107	6	12	10
60	66	85	73	72	80	71	6	-5	-2
61	80	63	69	86	64	73	6	1	4
62	99	111	105	106	119	114	7	8	9
63	69	92	78	75	94	83	6	2	5
64	66	70	65	87	78	81	21	8	16
65	104	103	104	106	93	100	2	-10	-4
Mean	85.07	89.63	92.14	94.66	97.85	96.61	10.12	8.94	7.37
N	43	51	57	62	65	62	43	51	57

Although IQ scores are expected to remain constant over time, it can be seen from Table I that the vast majority of the children gain on the IQ tests. For those with complete pre- and posttest data, 39 of 43 (90%) gained on Verbal IQ, 43 of 51 (84%) gained on Performance IQ, and 46 of 57 (81%) gained on Full Scale IQ.

A t-test for correlated samples was applied to the data. Shown below are the mean gains from pre- to posttesting, t-values, and level of significance.

Subtest	Mean Gain	t	p
Verbal IQ Score	10.12	7.60	.001
Performance IQ Score	8.94	7.10	.001
Full Scale IQ Score	7.37	5.26	.001

All gains were statistically significant beyond the .001 level of significance.

Table II presents the same results from the previous year of the project. It can be seen by comparison of Table I with Table II that while the initial IQ scores are higher for this project year, the amount of gain experienced by the children was also larger than for the last project year. This difference in gain may reflect:

1. Better performance by the staff who have an additional year's experience working in the program.

2. A differential effect of the program in that it "works better" with high ability students.

3. A cumulation effect in that students who are in the project and were in the project have higher IQ scores (due to the previous year's effect) and improve at an accelerated rate.

TABLE II

WECHSLER PRESCHOOL AND PRIMARY SCALE OF INTELLIGENCE PRE- AND POSTTEST RESULTS OF 22 CHILDREN IN SPECIAL CLASSES, 1970-71

	Pretest			Posttest			Difference		
S	Verbal	Performance	Full Scale	Verbal	Performance	Full Scale	Verbal	Performance	Full Scale
1	86	76	79	86	89	86	0	10	7
2	80	73	74	87	82	84	7	9	10
3	87	96	91	102	104	104	15	8	13
4	71	95	81	90	103	96	19	8	15
5	82	77	78	91	82	86	9	5	8
6	--	81	--	71	98	83	--	17	--
7	--	99	--	56	107	78	--	8	--
8	52	50	46	50	53	46	- 2	3	0
9	--	92	--	54	110	78	--	18	--
10	82	81	80	96	95	95	14	14	15
11	95	77	85	91	81	85	- 4	4	0
12	--	91	--	71	93	80	--	2	--
13	--	81	--	74	73	71	--	- 8	--
14	74	69	68	86	69	76	12	0	8
15	85	74	78	77	76	74	- 8	2	- 4
16	64	58	58	67	57	59	3	-1	1
17	67	88	75	72	92	80	5	4	5
18	86	89	86	100	95	97	14	6	11
19	84	72	76	91	72	80	7	0	4
20	--	76	--	74	67	68	--	- 9	--
21	--	80	--	66	85	73	--	5	--
22	69	92	78	75	101	86	6	9	8
Mean	77.6	80.3	75.5	84.1	85.6	82.3	6.5	5.3	6.7
N	15	22	15	22	22	22	15	22	15

The gains made last year were of the same qualitative type as those made during the present project year, with more gain made on the Verbal section of the IQ test than on the Performance section.

Identification of Children With Learning Disabilities

The diagnosed learning disabilities of the children were cross tabulated, and the results are presented in Table III. It can be seen that a majority of the children were diagnosed as "Word Sound Deafness" and "Perceptual Blindness".

TABLE III

CROSS TABULATION OF DIAGNOSED LEARNING DISABILITIES

	Visual Motor	Word Sound Deafness	Language Meaning	Perceptual Blindness
Visual Motor	0	14	1	11
Word Sound Deafness	14	4	0	48
Language Meaning	1	0	0	2
Perceptual Blindness	11	48	2	8
Total	26	66	3	69

(The total number of symptoms is greater than the number of children due to multiple diagnoses.) Few children were diagnosed as having a "Language Meaning" or "Visual Motor" disability; and of those that were, most were multiply diagnosed as Perceptual Blindness and/or Word Sound Deafness. Table IV condenses the data presented in Table III in order to clarify the situation. It can be seen from Table IV that forty-eight students were diagnosed as Word Sound Deafness and Perceptual Blindness, nine students as Perceptual Blindness and not Word Sound Deafness, seven students as Word Sound Deafness and not Perceptual Blindness, and one student as neither Perceptual Blindness or Word Sound Deafness. (Other classifications were omitted from this table.)

TABLE IV

CROSS TABULATION OF PERCEPTUAL BLINDNESS AND WORD SOUND DEAFNESS

DIAGNOSED AS PERCEPTUAL BLINDNESS	DIAGNOSED AS WORD SOUND DEAFNESS: Yes	DIAGNOSED AS WORD SOUND DEAFNESS: No	
Yes	48	9	57
No	7	1	8
	55	10	65

The results presented in Table III and Table IV are consistent with the results for the previous year (See Table V), and with the theory under which the program operates. It is believed that, while the percentage of children in the four disability categories are roughly equivalent and independent of each other in the population, children with Language Meaning and/or Visual Motor disabilities do not experience initial difficulties, are not detected, and thus are not referred for treatment.

It should be noted that the project is concerned with learning difficulties and the pre-school child is not in a "learning" (i.e. academic) setting. The combination Word Sound Deafness-Perceptual Blindness would tend to lead to a child who is hyper-active and is defective in speech. This child would be easily detected in a non-academic setting. Hyper-activity or speech defects alone probably do not arouse sufficient concern for referral, and the other disabilities would tend to manifest themselves only in an academic setting.

TABLE V

1970-71 DIAGNOSES OF LEARNING DISABILITIES

	Perceptual Blindness	Word Sound Deafness	Visual-Motor	Language Meaning
Mild	12	13	3	0
Moderate	20	17	3	2
Severe	3	4	1	0
Total	35	34	7	2

There is no way to determine if the diagnostic procedures are incapable of detecting Visual Motor or Language Meaning disabilities. The possibility that the procedures used were misclassifying disabilities or arbitrarily classifying disabilities as Perceptual Blindness and Word Sound Deafness was eliminated by comparison of those students diagnosed as only Perceptual Blindness, only Word Sound Deafness, and both Word Sound Deafness and Perceptual Blindness on the two sections of the Wechsler test. If the students were "misclassified", it would be expected that their performance on the sections of the test would be equal, as would the gain associated with each section of the test. Table VI shows this to tentatively not be the case.

TABLE VI

IQ PERFORMANCE BY DIAGNOSED DISABILITY

	Pretest		Posttest		Difference	
	Verbal	Performance	Verbal	Performance	Verbal	Performance
PB	94.5	93.2	104.8	94.3	10.3	1.1
WSD	90.0	95.5	95.8	103.0	5.8	7.5
PB+WSD	86.1	88.0	97.8	99.0	11.7	12.9

These results are tentative due to the small number of children involved and that the children received differential treatment as a function of their diagnosed disability. It is possible that the children gained differentially as a function of the treatment used without regard to a particular learning disability. It should be noted that the children were performing differentially on the two parts of the IQ test before the start of any treatment.

The results are shown pictorially in Graphs 1A and 1B. The differential gains are consistent with the theory under which the program is operating. As can be seen, students diagnosed as both Perceptual Blindness and Word Sound Deafness gained equally in both the Verbal and Performance sections of the IQ test, students diagnosed a Perceptual Blindness gained only in the Verbal category, and students diagnosed as Word Sound Deafness gained more in performance than Verbal. It would be expected that, with a sufficient number of cases, the results of the students with Word Sound Deafness disabilities would stabilize to be the opposite of the students with Perceptual Blindness disabilities (or vice-versa).

GRAPH 1

IQ PERFORMANCE BY DIAGNOSED DISABILITY

GRAPH A

Verbal IQ

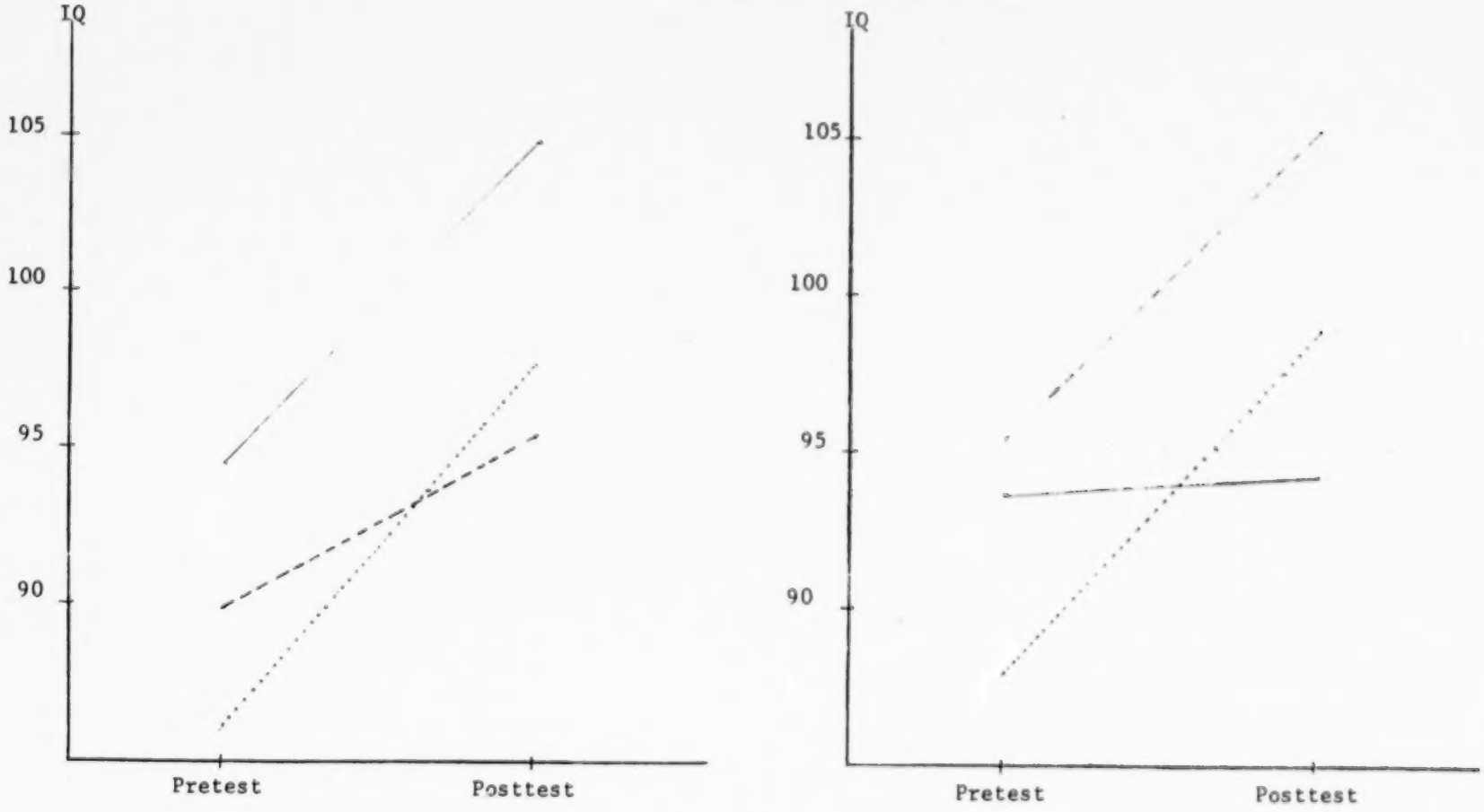
GRAPH B

Performance IQ

..... Word Sound Deafness + Perceptual Blindness

----- Word Sound Deafness

——— Perceptual Blindness



Home Program

The children were divided into three groups on the basis of "type" of participation in the project--class only, home only, and class and home. The results are presented in Table VII and Graph #2.

TABLE VII

IQ PERFORMANCE BY TYPE OF INSTRUCTION

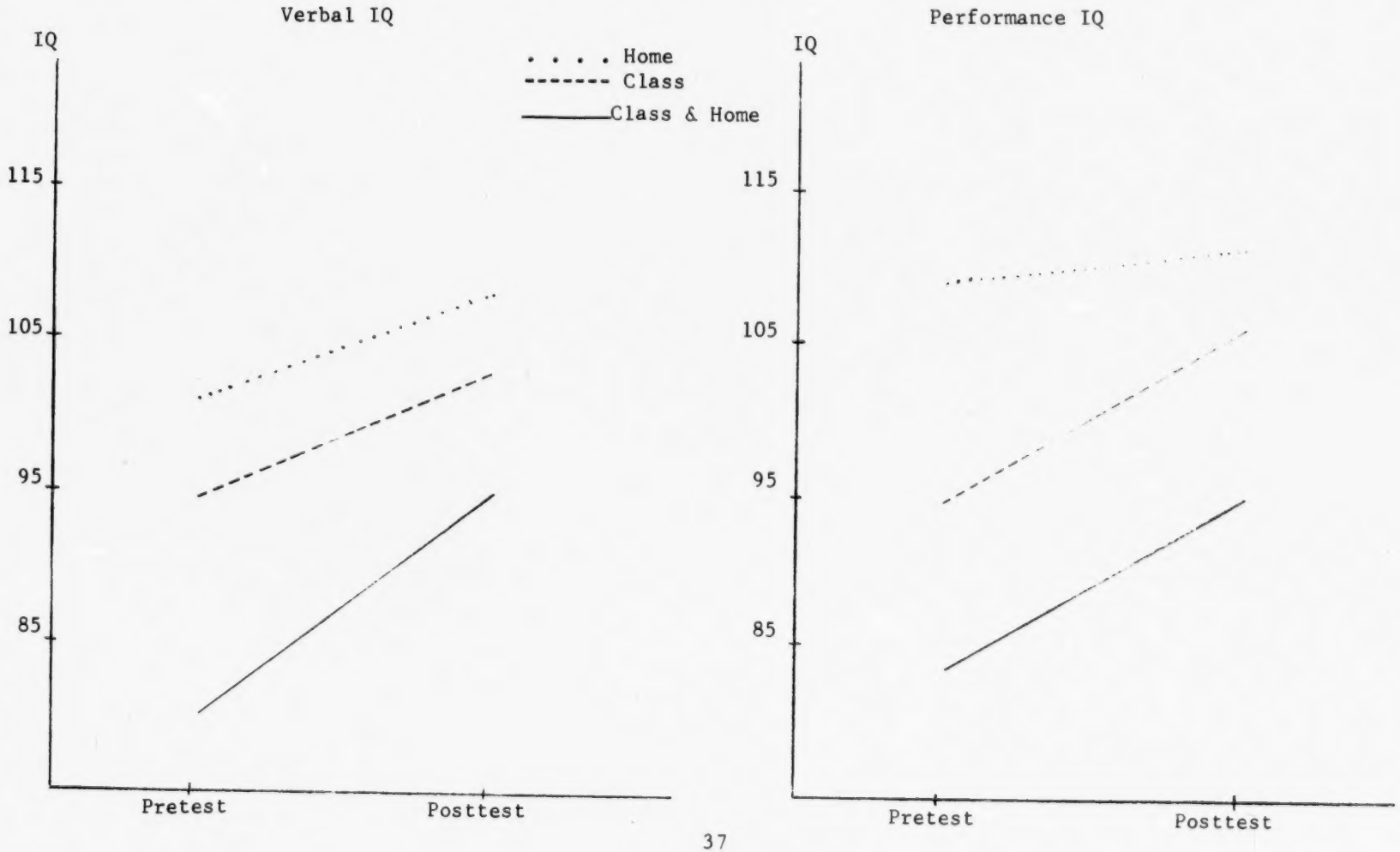
Type	Pretest		Posttest		Difference	
	Verbal	Performance	Verbal	Performance	Verbal	Performance
Class + Home	80.3	83.3	95.1	95.0	14.8	11.7
Class Only	95.3	95.0	103.9	106.4	8.6	11.4
Home Only	101.4	108.9	110.2	111.7	8.8	2.8

Statistical analysis of this data showed differences between the different groups and gain from pretest to posttest. No interaction was statistically significant, however the small number of students involved in the analysis resulted in little power to detect differences statistically. (Appendix F contains the statistical analysis.)

The differences between the groups is easily understood. Those students with the most severe handicaps (and thus lower IQ scores) were selected for the most intensive (class plus home) treatment initially, and those least handicapped received the least intensive treatment (home only). It may be tentatively stated that the lack of an interaction shows that the rational for assignment appears to be correct, as all the groups gained to a statistically equal degree. Apparently, the home instruction proved as effective with the higher ability children as the intensive instruction proved with the lower ability children.

GRAPH 2

IQ GAIN BY TYPE OF INSTRUCTION



Metropolitan Reading Readiness Test Scores

The Metropolitan Reading Readiness Test was administered to sixteen kindergarten children of the project at the end of the project year (May). Table VIII presents the results of this test administration, the results for the previous year, and the norm mean in terms of raw scores.

TABLE VIII

METROPOLITAN READINESS SCORES - MAY 1972

	Word Meaning	Listening	Matching	Alphabet	Numbers	Copying	Total
Mean (1971-72)	8.00	10.55	8.95	10.75	10.30	5.30	53.85
Mean (1972-73)	8.81	9.25	8.19	11.69	10.81	5.13	53.87
S.D. (1972-73)	3.80	2.24	3.17	4.85	4.13	3.81	17.34
Mean Norm	8.67	8.89	7.49	9.39	12.02	6.82	53.21

Statistically, all the sample means do not differ from the norm means. It should be emphasized that this sample came from a group with a pre-treatment mean verbal IQ of 85.07, and a post-treatment mean verbal IQ of 94.66; thus it would be expected that these students would score below average. (Based upon the test publishers correlation of .61, the predicted total score for students with a mean IQ of 94.66 is 49.66.) As can be seen from Table VIII, results on the Readiness Test for the present project year are essentially the same as for the previous project year and are above expectancy for below average children although not to a statistically significant degree.

The supplementary "Draw a Man" test was also administered to the students. This test is scored A, B, C, D, E from high to low. Ratings of: A = 1, B = 2, C = 3, D = 4, E = 5 were assigned to the scores of the children. The mean rating was 3.88, or below average. This result is in keeping with the lower IQ scores evidenced by the children, but is inconsistent with the Readiness Scores obtained.

Metropolitan Achievement Scores

Metropolitan Achievement scores from fifteen first-grade children who had been enrolled full time in the project the previous year were obtained and subjected to analysis. While not presently enrolled full time in the project, most of these children are receiving special help on a weekly basis through specialized personnel which visit the various schools in which they are enrolled. The results of these tests are presented in Table IX in terms of standard scores and grade equivalents.

TABLE IX

FIRST GRADE METROPOLITAN ACHIEVEMENT TEST SCORES--MAY 1972

	Word Knowledge	Word Analysis	Reading	Total Mathematics
Mean S.S.	37.60	34.53	35.80	34.13
S.D.	8.46	5.77	8.70	10.02
Mean G.E.	1.6	1.4	1.5	1.2
Norm G.E.	1.8	1.8	1.8	1.8

The students scored below average on all the subtests of the Metropolitan Achievement Test (statistically significant-- p = .05). It will be recalled that these students scored in the average range on the Metropolitan Readiness Test. It would appear that these students have regressed from the results of the readiness test. These students had a mean Total IQ of 100.12, mean Performance of 102.81, and mean Verbal IQ of 97.56. It is entirely possible that the readiness test is sufficiently non-verbal that the students could compensate and score at the average, whereas the achievement test is sufficiently verbal that the students were handicapped by their lower verbal IQ scores. If this is the case, the observed "regression" is not real, but simply reflects the difference in tests.

Alternatively, it is possible that the students are "losing ground" once intensive treatment has ceased which would be consistent with "Head Start" evaluation data. Were this true, however, it would be expected that the IQ scores of the students would drop (consistent with Head Start data). The IQ scores of these particular students rose from 97.47 to 100.12.

A third possible explanation lies in the failure of these parents to give wholehearted cooperation to the project. (See Parent Cooperation Factor, page 42.)

The second grade scores of these students should be subjected to analysis to determine if the second grade achievement scores show a decline from the first grade scores as both the content of the tests and lack of parent cooperation should be stable over the next year. It should also be noted that for administrative reasons, it was necessary to administer the test in one testing session instead of the recommended multiple testing sessions. The subtests were administered in order, and it can be seen from Table IX that the discrepancy between the performance of the children and the norm increases over time.

No comparable data exists for the previous project year since this is the third year of the project.

Records of project children who were enrolled in kindergarten or grade one were examined. Of the sixteen kindergarten children, thirteen (81%) were promoted to grade one. Two were retained in kindergarten and one was placed in a prefirst class. Fourteen of the sixteen first-grade pupils (87.5%) were promoted to grade two.

Parent Questionnaire

A questionnaire was mailed to 65 parents of children enrolled in the preschool project. Forty parents responded for a 62% return. The results of the questionnaire are presented in Table X. The responses of the parents were overwhelmingly positive with only two parents reporting "no improvement" on two questions. Over two-thirds of the parents responded in the most favorable category on every question.

TABLE X

PRESCHOOL PARENT QUESTIONNAIRE

Question	Response	1970-71 %	1971-72 N	1971-72 %
1. To what degree do you feel the Preschool Project staff has helped you to understand your child's learning problems?	Very much so	84	33	83
	Somewhat so	16	7	18
	None	0	0	0
2. To what degree do you feel the Preschool Project staff has helped you to help your child?	Very much so	94	34	85
	Somewhat so	6	6	15
	None	0	0	0
3. To what degree do you feel the Preschool Project staff has helped you to improve your skills to observe noticeable changes in your child?	Very much so	84	30	75
	Somewhat so	16	8	20
	None	0	2	5
4. What change, if any, have you noticed in your child's learning problems?	Much improved	88	29	74
	Some improved	12	10	26
	Not improved	0	0	0
5. What change, if any, have you noticed in your child's attitude towards school?	Much improved	88	24	67
	Somewhat improved	12	10	28
	Not improved	0	2	6
6. The conferences with Preschool Project staff have been:	Very valuable	74	29	73
	Valuable	26	11	28
	Of no value	0	0	0
8. Please indicate if this is your child's first, second or third year in the Preschool Project.	First year	55	16	43
	Second year	45	13	35
	Third year	0	8	22

Question 7 asked the parents to comment on the program and to suggest areas for improvement. The parents responded as follows:

1. Seven parents simply stated that they appreciated the program.

2. Two parents suggested more meetings with parents.

3. Two parents suggested expanding the program to help more students.

4. One parent suggested the use of parent aides in the classroom when possible.

5. One parent suggested materials be made available for home use and expressed a desire to purchase the materials if necessary.

6. One parent expressed a desire to contribute financially to the program for miscellaneous expenses.

It can be seen from Table X that results for the past two years are similar with perhaps a decline in positive responses this project year from the last project year. Differences were not statistically significant. It is suspected that this decline is a result of incorporating into the total results, results from parents whose children are now in first grade and are not receiving intensive treatment.

Although there exists no way of separating the parent questionnaire responses by grade, evidence for the interaction of parent opinion and age of child exists by consideration of the project teachers" evaluation of parent cooperation.

The overall parent cooperation level was high with forty-three parents being rated "very cooperative", fourteen parents "cooperative", six parents "partially cooperative", and three parents "not cooperative". (See Graph 3.) Although only sixteen out of sixty-six children were in the first grade:

1. Of the three parents who were "not cooperative", three had children in the first grade.

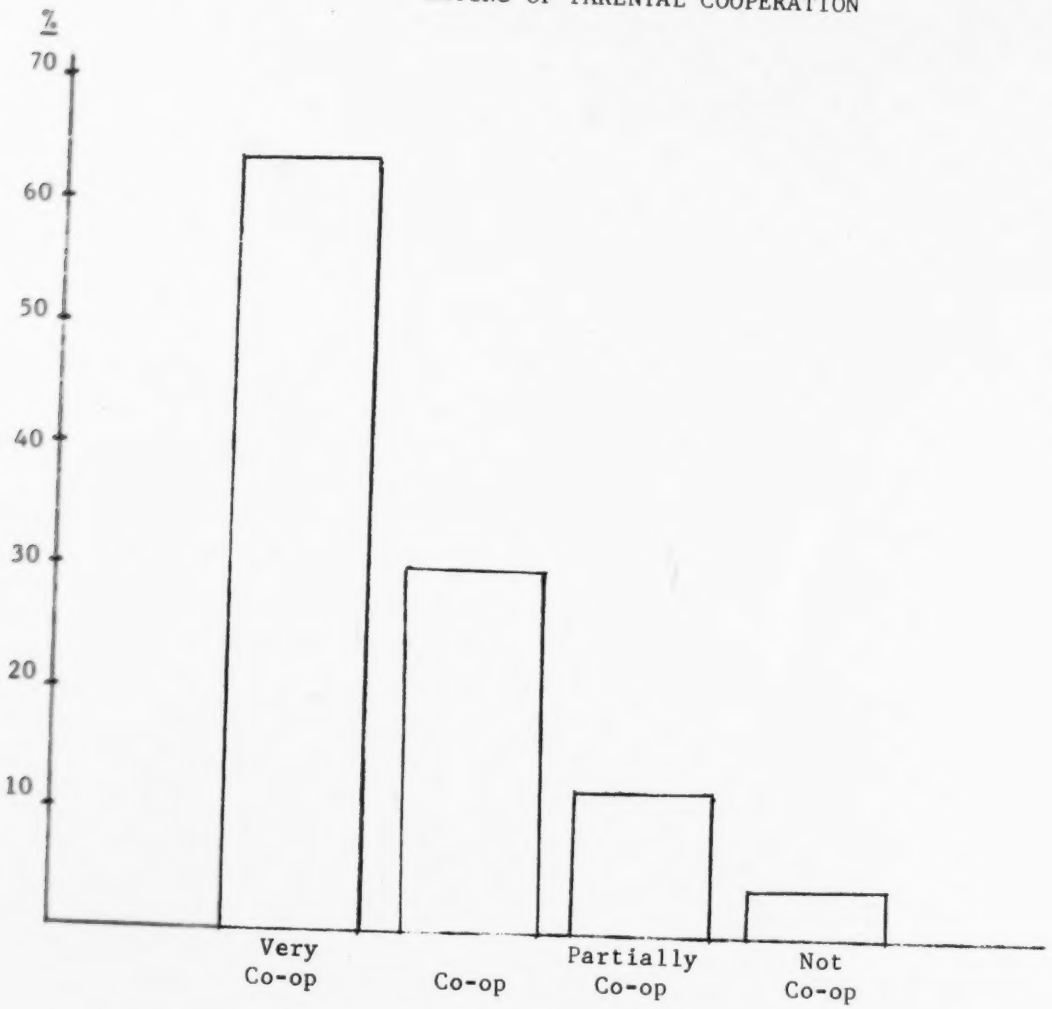
2. Of the six parents who were "partially cooperative", four had children who were in the first grade.

It is possible that this lack of parental cooperation may have contributed to the decline in achievement scores previously alluded to in this report, should that decline be "real".

Insofar as success is measured by parental opinion, it appears that the project has been successful in acquainting the parents with the developmental problems of their children and providing a home environment for improvement.

GRAPH 3

RATING OF PARENTAL COOPERATION



Teacher Ratings of Project Children

The identification form used for referral was sent to the classroom teachers of project children who were now attending kindergarten or first grade at their neighborhood school. Teachers were asked to rate these children based upon comparisons with other children in their classrooms. The results of this rating form are contained in Table XI. As can be seen from Table XI, the responses to the questions tend to be negatively skewed. Most of the children were rated below average.

TABLE XI

TEACHER RATINGS OF STUDENTS

Question	Response	N	%
1. Large- muscle development. (Skipping, jumping, hopping,etc.)	Very uncoordinated	2	6
	Uncoordinated	9	27
	Average	20	59
	Skillful	3	9
	Very skillful	0	0
2. Fine-muscle development. (Finger dexterity, eye-hand co-ordination, etc.)	Very uncoordinated	4	12
	Uncoordinated	13	38
	Average	10	29
	Skillful	7	21
	Very skillful	0	0
3. Size	Small	2	6
	Smaller than most Kdg. children	8	24
	Average	18	53
	Larger than most Kdg. children	6	18
	Very large	0	0
4. Speech development	Practically mute	2	6
	Quiet	11	32
	Average	9	27
	Talkative	7	21
	Very Talkative	5	15
5. Maturity of speech	Almost incomprehensible	3	9
	Many infantile speech manner-isms	15	44
	Normal	12	35
	Mature for age	4	12
	Very mature for age	0	0
6. Bilingual background	Yes	1	3
	No	30	97
7. Following directions	Incapable of following directions	1	3
	Needs constant supervision	6	18
	Needs some supervision	16	47
	Follows directions with minimum supervision	9	27
	Follows directions correctly	2	6

TABLE XI (Continued)

Question	Response	N	%
8. Attention	Almost impossible to get and hold	1	3
	Easily distracted	16	47
	Moderately attentive	8	24
	Relatively undisturbed by extraneous activities	7	21
	Rarely distracted	2	6
9. Effort	Indifferent	0	0
	Easily gives up	7	21
	Has high and low periods of interest and effort	10	29
	Tries most of the time	11	32
	Almost always does his best	6	18
10. Performance rate	Slow and inaccurate	3	9
	Slow, but fairly accurate	11	32
	Average speed and accuracy	12	35
	Quick, but inaccurate	5	15
	Quick, and accurate	3	9
11. Stability	Often has temper tantrums	2	6
	Often is shy and withdrawn	9	28
	Alternates anger and withdrawn behavior	7	22
	Normal emotional control	14	44
	Extremely stable emotionally	0	0
12. Self-Control	Constantly annoys others and creates a disturbance	5	15
	Finds it very difficult to keep silent and sit still	12	35
	Normal self-control	8	24
	Rarely is a disturbing influence	8	24
	Always exhibits self-control	1	3
13. Anxiety	Extremely ill at ease	0	0
	Easily frustrated	15	44
	Average social confidence	17	50
	Better than average social confidence	2	6
	Completely at ease	0	0

TABLE XI (Continued)

Question	Response	N	%
14. Cooperation	Hostile and uncooperative	0	0
	Sometimes uncooperative	7	21
	Generally good	11	32
	Cooperates readily	14	41
	Enthusiastic	2	6
15. Behavior towards school property	Very destructive	0	0
	Sometimes destructive	5	15
	Average	8	24
	Usually careful	18	53
	Values property highly	3	9
16. Working in groups	Argumentive	0	0
	Bothersome	12	35
	Considerate of the rights of others	16	47
	Kind and helpful	4	12
	Solicitous of others	2	6
17. Playing in groups	Prefers to play alone	5	14
	Plays with group but often causes friction	8	24
	Gets along well with peers	18	53
	Shows leadership in group play	3	9
	Is usually leader in group situations	0	0

The mean response to the questions are slightly below average except for:

Question 7. "Following directions"

Question 9. "Effort"

Question 14. "Cooperation"

Question 15. "Behavior toward school property"

where the students scored above average.

It appears that these attributes are those that would be most directly influenced by individualized instruction and attention. Also they appear to be attributes that will contribute positively to school performance. No comparable data exists for the previous year.

Prediction of Academic Success

The teacher questionnaire was factor analyzed to determine what factors were being measured. Table XII presents the results of that factor analysis. A principal axis solution was used followed by a varimax rotation. All factors with eigenvalues greater than one were extracted. It was decided to use only those loadings with values greater than .4950 ($p < .01$) for inclusion. It was found that the only variable loading on factor IV was "Size" and the only variable loading on factor V was "Large Muscle Development". Both factors were dropped from further consideration.

TABLE XII

FACTOR ANALYSIS OF TEACHER QUESTIONNAIRE

Variable	Factor I Academic	Factor II Speech	Factor III Social
1. Large Muscle development	--	--	--
2. Fine muscle development	.53	--	--
3. Size	--	--	--
4. Amount of speech	--	.86	--
5. Maturity of Speech	--	.53	--
6. Bilingual background (Not considered)	--	--	--
7. Following directions	.83	--	--
8. Attention	.69	--	.53
9. Effort	.70	--	.55
10. Performance rate	.71	--	--
11. Stability	.65	--	--
12. Self-control	--	--	.62
13. Anxiety	--	--	.60
14. Cooperation	--	---	.86
15. Behavior towards school property	--	--	.82
16. Working in groups	--	--	.77
17. Playing in groups	--	--	.65

It appears that the first factor is an academic, work-study habit factor, the second is a speech factor, and the third is a classroom social factor. The combined factors account for approximately 61% of the total variation. All five factors account for approximately 75% of the total variation. The complete varimax solution is presented in Appendix F.

Rather than obtain true factor scores, pseudo-factor scores were obtained by a simple sum of the questions that loaded on a particular factor, e.g. the score of a student on questions 2, 7, 8, 9, 10, 11 were summed to provide a measure of that student's score on the academic factor. An average rating of "three" on a variable for all the variables loading on a factor would result in an "average"

score of eighteen on the academic factor (six questions times the average score of three), six on the speech factor (2 x 3) and twenty-four on the social factor (8 x 3).

These pseudo-factor scores were obtained for each of the students on each of the three factors. The scores were then correlated with the Metropolitan Achievement Test scores for first grade children and Metropolitan Readiness scores for the Kindergarten children. The results for first grade children are presented in Table XIII.

TABLE XIII

INTERCORRELATIONS OF FACTORS WITH METROPOLITAN ACHIEVEMENT TEST

	Word Knowledge	Word Analysis	Reading	Math	Academic Factor	Speech Factor	Social Factor
Word Knowledge Mean = 38.54	1.00	.58	.87	.85	.38	-.06	.10
Word Analysis Mean = 35.54		1.00	.42	.48	.60	.22	.46
Reading Mean = 37.38			1.00	.96	.35	.05	.04
Math Mean = 35.62				1.00	.40	.20	.09
Academic Factor					1.00	.16	.84
Speech Factor						1.00	.09
Social Factor							1.00

Only thirteen students had complete Metropolitan Achievement Test scores and teacher ratings. No attempt has been made to draw inferences from such a small sample. (With thirteen students, a correlation of .634 would be needed to be significant at the .05 level.) It should simply be noted that the data seem to be reasonable in that it appears that the academic factor is a fair predictor of academic success. It should be noted that the correlations are probably low due to the restricted range on the Metropolitan Test. The students appear to be average on the three factors. The correlations of the six variables which load on the academic factor with the Metropolitan Achievement Test suggest that the project concentrate on these six variables to improve academic performance at the first grade level.

Fifteen kindergarten students had complete Metropolitan Reading Readiness scores. Factor scores as previously described were found for these students and the results correlated with the various scales of the readiness test. The results are presented in Table XIV.

TABLE XIV

INTERCORRELATIONS OF FACTORS WITH METROPOLITAN READINESS TEST

	Word Meaning	Listening	Matching	Alphabet	Numbers	Copying	Total	Draw-a-Man	Academic Factor	Speech Factor	Social Factor
Word Meaning Mean = 38.54	1.00	.57	.76	.57	.41	.22	.75	.27	.38	.63	.23
Listening Mean = 9.13		1.00	.68	.65	.62	.29	.79	.34	.65	.46	.30
Matching Mean = 8.07			1.00	.64	.55	.63	.90	.71	.74	.68	.61
Alphabet Mean = 11.40				1.00	.50	.58	.86	.59	.60	.31	.49
Numbers Mean = 10.60					1.00	.26	.72	.34	.62	.55	.33
Copying Mean = 4.80						1.00	.65	.88	.78	.29	.86
Total Mean = 52.67							1.00	.68	.80	.61	.61
Draw a Man (Reflected) Mean = 2.13								1.00	.73	.42	.69
Academic Factor Mean = 17.40									1.00	.42	.74
Speech Factor Mean = 5.47										1.00	.06
Social Factor Mean = 24.13											1.00

As with the first grade children, no attempt has been made to draw inferences from such a small sample; however, it does appear that the academic factor predicts readiness scores fairly well, and that it may be profitable for the pre-school staff to concentrate on developing the variables that load on this factor. It should be noted that the results of this analysis do not appear as "clean" as the first grade results with both the speech and social apparently contributing to predicting readiness scores--though not to the extent of the academic factor.

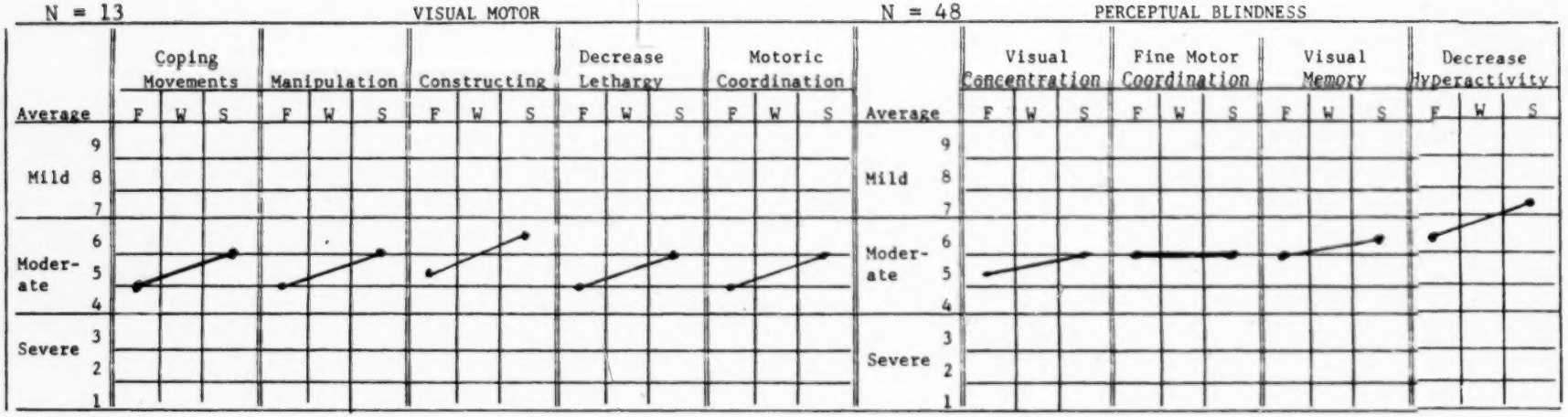
Project Teachers' Records

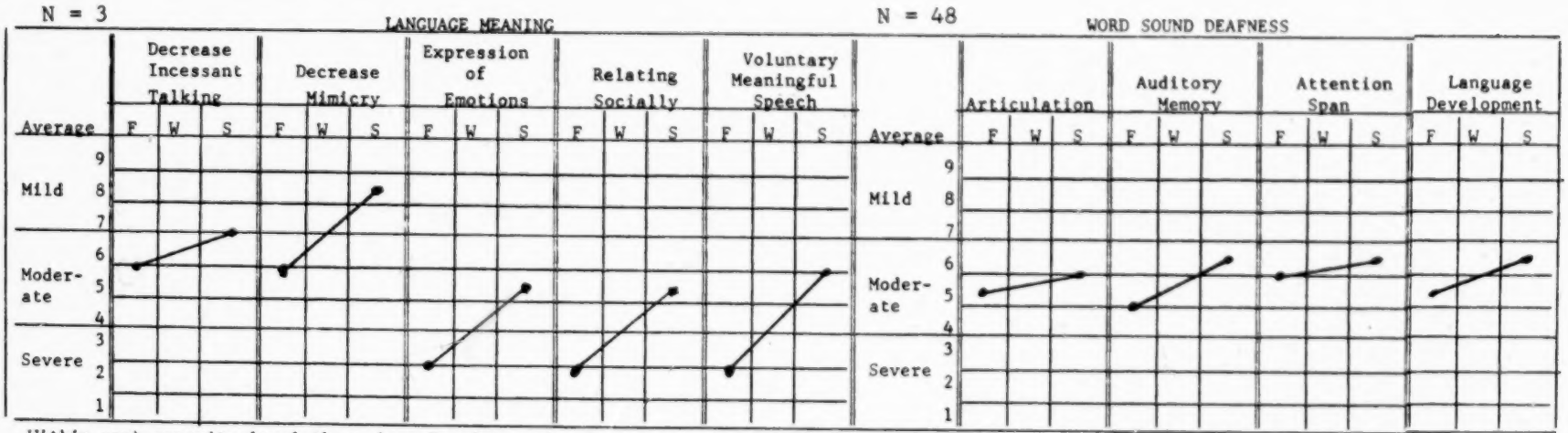
Teachers maintained weekly records of each child's progress in the categories pertaining to his specific diagnosed disability. Table XV reports the results of the initial and final average ratings for each diagnosed disability. (In the table, F = Fall, W = Winter, and S = Spring) As can be seen, all categories showed an increase in performance except for "Fine Motor Coordination" for children diagnosed as "Perceptual Blindness."

TABLE XV

COMPOSITE PROGRESS REPORT

1971-72





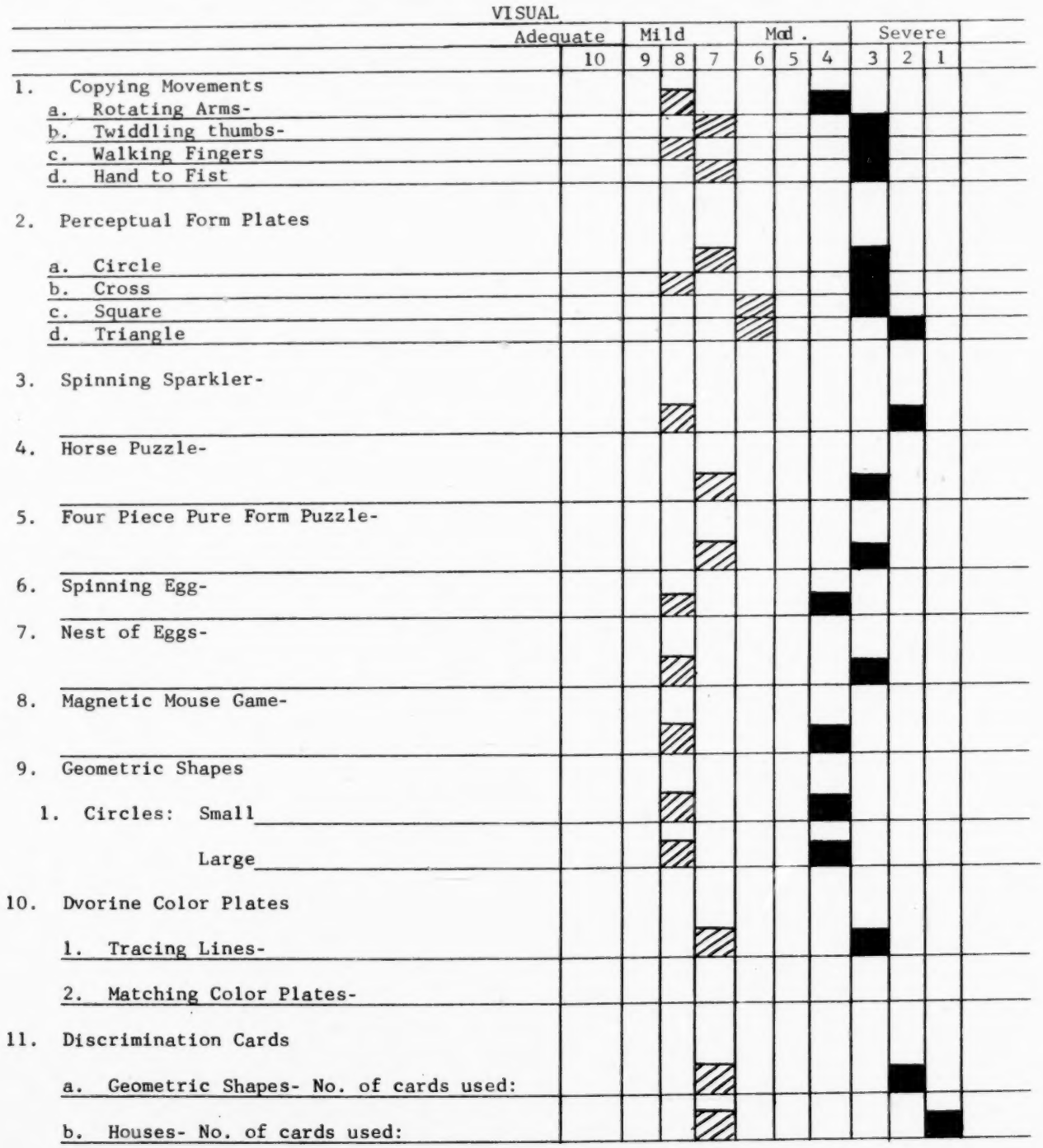
Within each severity level there is a 3-point scale: lowest no. = poor, middle no. = average, highest no. = good, with the ultimate objective to have each child reach average performance in each particular skill.

Table X VI presents the results of diagnostic testing for visual deficiencies on a pre- and posttest basis. The child is asked to perform specific tasks and tasks which are difficult for him are indicative of specific learning disability areas. All scores showed positive gain. The results of testing for auditory deficiencies follow Table X VI

TABLE XVI

COMPOSITE DIAGNOSTIC EVALUATION

Average Performance Level of the 66 Children Involved in Research on Pre and Post Diagnosis



Pre-Diagnosis: ■ Post-Diagnosis: ▨

AUDITORY

Auditory Memory	Pre-Diagnosis Yes	Pre-Diagnosis No	Post-Diagnosis Yes	Post-Diagnosis No
1. Doorway	55	7	64	2
2. Airplane	55	7	64	2
3. Cowboy	55	7	64	2
4. Horseshoe	54	8	64	2
5. Outside	54	8	64	2
6. Churchbell	54	8	64	2
7. Earthquake	51	11	63	3
8. Armchair	54	8	64	2
9. Shipwreck	53	9	64	2
10. Northwest	53	9	63	3
1. Birthday-Coughdrop	44	16	63	3
2. Daylight-Baseball	43	17	61	5
3. Rainbow-Oatmeal	40	20	55	11
4. Sunset-Shotgun	30	30	52	14
5. Scarecrow-Playmate	32	28	53	13
6. Whitewash-Firefly	27	33	43	23
7. Dugout-Jackknife	27	33	46	20
8. Iceburg-Eardrum	30	30	45	21
9. Farewell-Woodchuck	33	27	49	17
10. Wayside-Washboard	27	33	46	20
1. Icebox-Doorstep-Stairway	4	42	17	49
2. Sidewalk-Mousetrap-Headlight	4	42	17	49
3. Beehive-Footstool-Lightbulb	3	43	12	54
4. Schoolboy-Blackout-Toothbrush	6	40	29	37
5. Doorway-Airplane-Playground	6	40	25	41
6. Doormat-Cookbook-Sundown	5	41	14	52
7. Hardware-Eyebrow-Railroad	3	43	8	58
8. Blackboard-Birthday-Backbone	2	48	14	52
9. Cowboy-Wildcat-Lookout	4	42	19	47
10. Schoolhouse-Coughdrop-Daylight	3	43	16	50
Phonetically Balanced Words				
1. Cane	2	5	1	1
2. Such	2	5	0	2
3. Folk	2	5	1	1
4. Is	2	5	1	1
5. Strife	2	5	0	2
6. No	2	5	0	2
7. Death	2	5	1	1
8. Bar	2	5	1	1
9. Feast	2	5	0	2
10. Deed	2	5	0	2
1. Heap-Pile	3	15	7	1
2. Hunt-Mange	2	16	6	2
3. Box-Toe	2	16	5	3
4. Pest-Bask	3	15	5	3
5. End-Ride	3	15	5	3
6. Push-Slip	3	15	5	3
7. Bad-Fern	3	15	6	2
8. Clove-Are	3	15	6	2
9. Ford-Smile	3	15	5	3
10. Rise-Pan	3	15	6	2

Numbers indicate total number of correct and in-correct responses.

Phonetically Balanced Words---Continued

	Pre-Diagnosis		Post-Diagnosis	
	Yes	No	Yes	No
1. Hid-Pants-Grove	15	27	40	11
2. Cleanse-There-Nook	14	28	31	20
3. Then-Dike-Use	15	27	35	16
4. Crash-Rub-Wheat	15	27	41	10
5. Not-Fuss-Rag	14	28	33	18
6. Tan-Perk-Our	14	28	31	20
7. Moose-Bait-Charge	13	29	40	11
8. Shoe-Pick-Rib	13	29	36	15
9. Wish-Five-Knock	12	30	25	26
10. Job-Nab-Start	15	27	31	20

Language Memory

	Pre-Diagnosis		Post-Diagnosis	
FRUITS	Yes	No	Yes	No
1. Apple	55	6	66	0
2. Orange	48	18	64	2
3. Lemon	16	46	47	19
4. Pear	18	44	53	13
5. Banana	48	14	66	0
VEGETABLES				
1. Carrot	50	12	62	4
2. Corn on Cob	51	11	63	3
3. Head of Lettuce	30	32	43	23
4. Cabbage	2	60	23	43
5. Beans	13	49	39	27
ANIMALS				
1. Rabbit	52	10	66	0
2. Horse	55	7	66	0
3. Cat	56	6	66	0
4. Bird	52	10	65	1
5. Camel	31	31	57	9
6. Pig	43	19	66	0
7. Cow	43	19	65	1
8. Sheep	34	28	63	3
WORKERS				
1. Policeman	45	17	65	1
2. Mailman	36	26	63	3
3. Soldier	32	30	56	10
4. Cowboy	46	16	63	3
5. Astronaut	29	33	47	19
6. Painter	40	22	62	4
BODY PARTS				
1. Nose	28	34	55	11
2. Eye	54	8	66	0
3. Mouth	52	10	65	1
4. Hand	53	9	66	0

Numbers indicate total number correct and in-correct responses.

Language Memory---Continued

	Pre-Diagnosis		Post-Diagnosis	
	Yes	No	Yes	No
DVORINE COLOR WHEEL				
Naming Colors				
Green	32	34	66	0
Blue	32	34	66	0
Yellow	29	37	66	0
Purple	24	42	65	1
Brown	27	39	65	1
Red	29	37	66	0
Orange	34	32	64	2
Grey	12	54	40	26

Numbers indicate total number of correct and incorrect responses.

Findings

"Objective 1. To identify children who have developmental problems:

Children were referred for testing and sixty-five children were diagnosed as having learning disabilities. These sixty-five children participated in the project.

"Objective 2. To identify specific problems involving the development of motor, visual, and auditory skills."

Sixty-five children were classified by their particular learning disability. Multiple disabilities were common, with the majority of the problems being classified as "Word Sound Deafness" and "Perceptual Blindness".

"Objective 3. To establish a special classroom intervention plan that will improve the child's functional skills in the areas of identified disability.

Pre- and posttesting showed that the children gained in tasks indicative of learning disabilities and also showed significant gain on IQ scores. The pre- posttest IQ scores showed a "disability" by "type of gain" interaction, the children diagnosed as having a Word Sound Deafness disability gained more on performance IQ than on verbal IQ, and the children diagnosed as having a Perceptual Blindness disability gained more on Verbal IQ than on Performance IQ. Children diagnosed as having both Perceptual Blindness and Word Sound Deafness disabilities gained equally on both Verbal and Performance IQ.

These differential gains are consistent with accurate diagnosis of the learning disabilities.

Metropolitan Readiness Test scores showed the kindergarten children to be average. Eighty-one percent of the kindergarten children were promoted to the first grade.

Metropolitan Achievement scores showed the first grade children to be below average. Eighty-seven percent of the first grade children were promoted to the second grade.

"Objective 4. To teach parents to understand their child's developmental problem in terms of how it affects his functioning so that they will be more effective in rearing the child."

Responses to a parent questionnaire showed that 100 percent of the parents who responded felt that the project staff had "helped them to understand their child's learning problem"; and that 100 percent felt that conferences with the preschool staff had been valuable. Also 100 percent felt the preschool staff had helped them to help their child.

"Objective 5. To teach parents to recognize changes in the functional development of their children in the areas of attitudes, skills and responsibility."

Ninety-five percent of the parents responding to a questionnaire felt the project staff had improved their skills in observing noticeable changes in their child.

"Objective 6. To teach parents how to provide a home intervention program that will improve the child's functional skills."

IQ data of children in only the home program indicated that the gain in IQ points of these children does not differ statistically from those in the class intervention program.

"Objective 7. To identify the developmental factors associated with academic learning disabilities when the child reaches the primary grades."

Classroom teachers of project children who were attending kindergarten or first grade in their neighborhood schools were asked to rate the project pupils on several variables. Factor analysis of these pupil ratings resulted in six variables loading on an "academic factor."

1. Fine muscle development
2. Following directions
3. Attention
4. Effort
5. Performance rate
6. Stability

When combined, these variables do fairly well at predicting "success" on the various scales of the Metropolitan Reading Readiness Test and the Metropolitan Achievement Test (Primary I).

"Objective 8. To coordinate center efforts with those of the regular classroom teacher to assure that the handicapped child will receive sufficient individual support to make satisfactory progress in school."

The project staff reported holding more than one hundred fifty conferences. The majority of these conferences were held with individual classroom teachers where recommendations for teaching procedures were made for project children. Many conferences were held with school social workers, child welfare personnel, doctors, school principals, audiologists, school psychologists, and speech therapists.

Project personnel also visited the individual students in their classrooms to provide additional individual help.

RECOMMENDATIONS

Recommendations:

1. A longitudinal study should be undertaken by the district on children who have been serviced by the Preschool Project. Data for these children from the regular district testing program should be analyzed yearly and records of success as evidenced by promotion/retention and special education referral should be considered.

2. More investigation should be undertaken of the observed regression effect by:

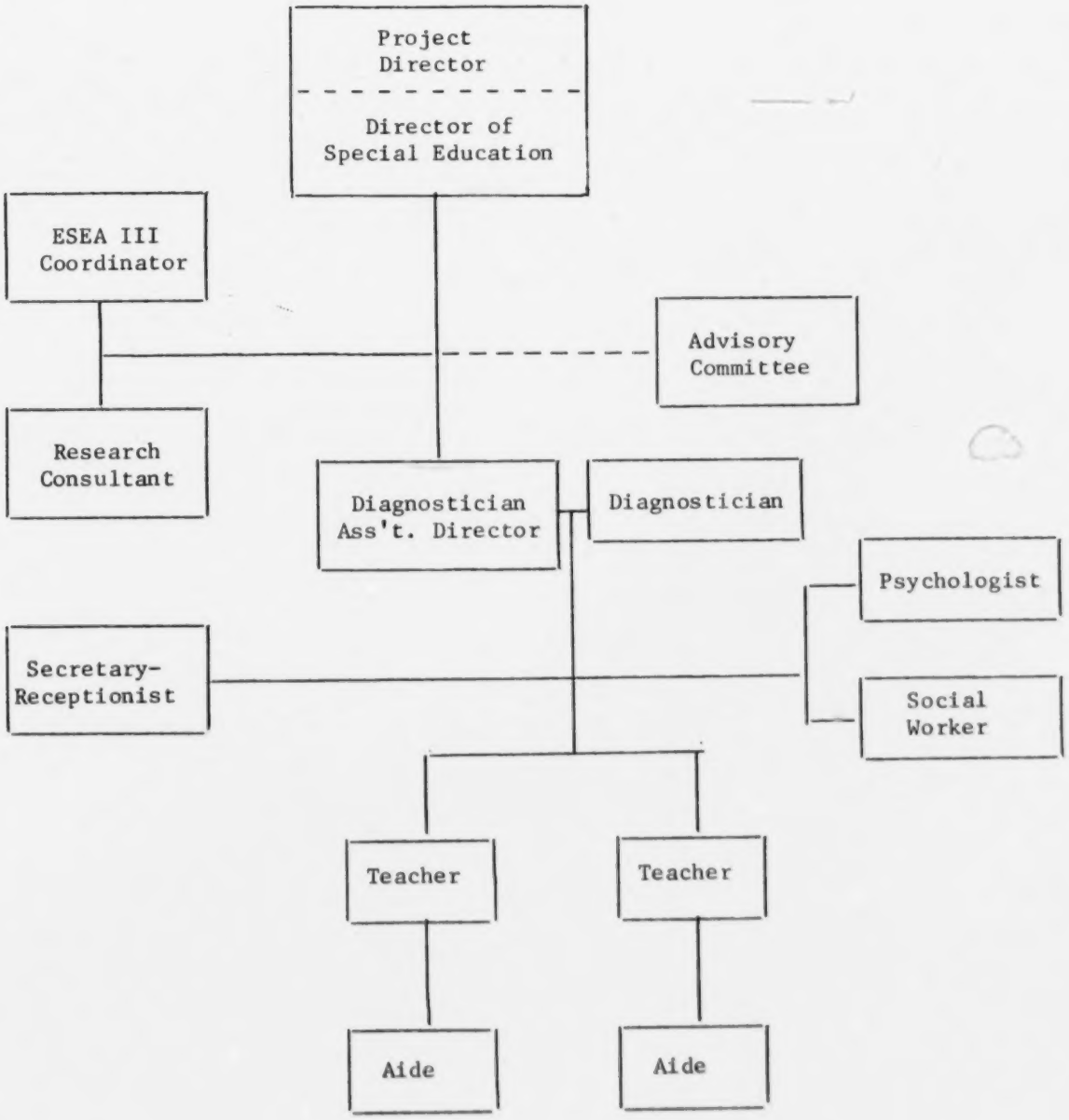
   a. Analyzing the next series of standardized tests given to the children who had taken the Metropolitan Achievement in the first grade to determine if their achievement test scores continue to drop.

   b. Testing the 1971-72 kindergarten children at the end of their first grade year (May 1973) with the Metropolitan Achievement test to determine if this group also shows a regression in achievement. (The regression of the 1971-72 first grade pupils might have been a function of the lack of parental cooperation found among this group.)

3. If it is true that Word Sound Deafness and Perceptual Blindness are independent in the student population (i.e. uncorrelated); and that the percentage of children with Language Meaning and Visual Motor disabilities approaches that of the Perceptual Blindness and Word Sound Deafness children, then it is clear that the program is reaching an infinitesimal part of the population it could benefit. It is suggested that an active dissemination program be undertaken to acquaint the referring agencies with the symptoms of the four disabilities mentioned in order to improve diagnoses and increase the probability that a child with a particular disability be referred.

APPENDIX A

PROJECT STAFF ORGANIZATION



APPENDIX B

Methods of Determining Deficit Behavior

1. The child attempts to copy the following movements when these are demonstrated for him: rotating arms, twiddling thumbs, walking fingers, hand to fist. If the child cannot copy these movements, a visual-motor deficit may be present. The severity of the impairment is indicated by the degree of assistance the child requires to complete the tasks. It is important then for the examiner to determine whether the problem is motor alone or not.

2. Perceptual form plates are used to determine how well the child can copy a cross, a circle, a square, and a triangle. If the child is unable to manipulate the primary pencil and/or if he cannot guide his hands to complete the task, a deficit behavioral pattern of development in the visual-motor area or some degree of perceptual blindness is indicated.

3. The spinning sparkler is used to determine how well the child can copy the movements required to operate the sparkler. If the child has difficulty, a degree of visual-motor disability is apparent.

4. The spinning egg test is used following the spinning sparkler test to determine the degree to which the child is able to apply such skills as may have been learned in the former test. If no carry-over is apparent, symptoms of a visual-motor disability are present.

5. Puzzles are used to determine how well a child can perceive form and form relationships. If form manipulation presents a problem, a visual-motor disability may be present. Perceptual blindness is indicated if the child can be forced to use his eyes to perceive form relationships in assembling the puzzle when he habitually attempts to use a trial and error approach.

6. The nest of eggs device tests ability to discriminate between sizes, shapes, and colors. Lack of ability to differentiate between these qualities may be indicative of a perceptual blindness disability. Inability to fit the pieces together may depict a visual-motor disability.

7. The child is expected to guide a toy mouse with a magnet to help determine eye/hand coordination. If the child displays hyperactivity and does not want to look to guide his hand, a degree of perceptual blindness may be indicated.

8. The tracing lines of the Dvorine Color Plates provide assessment of the child's ability to discriminate color and guide his hands. Symptoms of perceptual blindness and/or a visual-motor problem are depicted in the child's inability to accomplish the tasks.

9. The Dvorine Color Wheel is used to test a child's ability to name colors. If the child has difficulty, he is told what the names are. If he still cannot remember, lip reading is employed to see if this improves his auditory memory. Depending on the difficulty the child experiences, a symptom of word-sound deafness becomes apparent.

10. Spondee words are used to identify problems of auditory discrimination and memory. These problems are in evidence, if the child has difficulty repeating the words back to the examiner. Amplified sound and lip reading techniques are employed during the test situation to determine whether or not the child can improve his responses.

11. A further assessment of a child's auditory memory to determine the degree of word-sound deafness is accomplished by presenting pictures of common elements in the child's immediate environment (fruits, vegetables, animals, workers, body parts) for his identification. His visual skill to perceive these pictures can be assessed by matching like pictures.

12. The responses which indicate a language meaning disability are observed throughout the entire examination procedure. These include all aspects of linguistic behavior, excluding a sensory hearing loss.

The diagnostician's assessment of the severity of a child's impairment remains primarily a subjective judgment since the rationale employed is still in the experimental stage. However, the following considerations form a basis for diagnostic conclusions:

> If the child is able to complete a task successfully with only a single demonstration by the diagnostician, no deficit behavioral symptoms are present.
>
> If the child can perform a task after two or three demonstrations by the diagnostician, the problem is rated as mild.
>
> When the child requires repeated demonstrations and his performance remains poor, he is judged as having moderate deficits in the area tested.
>
> If the child cannot perform after repeated demonstration and fails to respond to all visual and auditory assistance, his problem is severe.

An example of the Diagnostic Evaluation forms used in conjunction with the foregoing procedures is presented on the next three pages.

DIAGNOSTIC EVALUATION

Name_____ Date of Birth_____
Date_____ Address_____
Phone_____

VISUAL

	Comments	High	Avg.	Low
1.	Copying Movements			
	a. Rotating Arms:			
	b. Twiddling Thumb:			
	c. Walking Finger:			
	d. Hand to Fist:			
2.	Perceptual Form Plates			
	a. Circle:			
	b. Cross:			
	c. Square:			
	d. Triangle:			
3.	Spinning Sparkler:			
4.	Horse Puzzle:			
5.	Four Piece Pure Form Puzzle:			
6.	Spinning Egg:			
7.	Nest of Eggs:			
8.	Magnetic Mouse:			
9.	Geometric Shapes			
	a. Circles: Small			
	Large			
10.	Dvorine Color Plates			
	a. Tracing Lines			
	b. Matching Color Plates			
11.	Discrimination Cards			
	a. Geometric Shapes - No. of cards used:			
	b. Houses - No. of cards used:			

AUDITORY

Auditory Memory	Free Field Yes	Free Field No	Amplified Sound Yes	Amplified Sound No
1. Doorway				
2. Airplane				
3. Cowboy				
4. Horseshoe				
5. Outside				
6. Churchbell				
7. Earthquake				
8. Armchair				
9. Shipwreck				
10. Northwest				
1. Birthday-Coughdrop				
2. Daylight-Baseball				
3. Rainbow-Oatmeal				
4. Sunset-Shotgun				
5. Scarecrow-Playmate				
6. Whitewash-Firefly				
7. Dugout-Jackknife				
8. Iceburg-Eardrum				
9. Farewell-Woodchuck				
10. Wayside-Washboard				
1. Icebox-Doorstep-Stairway				
2. Sidewalk-Mousetrap-Headlight				
3. Beehive-Footstool-Lightbulb				
4. Schoolboy-Blackout-Toothbrush				
5. Doormat-Cookbook-Sundown				
6. Doorway-Airplane-Playground				
7. Hardware-Eyebrow-Railroad				
8. Blackboard-Birthday-Backbone				
9. Cowboy-Wildcat-Lookout				
10. Schoolhouse-Coughdrop-Daylight				
Phonetically Balanced Words				
1. Cane				
2. Such				
3. Folk				
4. Is				
5. Strife				
6. No				
7. Death				
8. Bar				
9. Feast				
10. Deed				
1. Heap-Pile				
2. Hunt-Mange				
3. Box-Toe				
4. Pest-Bask				
5. End-Ride				
6. Push-Slip				
7. Bad-Fern				
8. Clove-Are				
9. Ford-Smile				
10. Rise-Pan				

Phonetically Balanced Words-Cont'd.	Free Field			Amplified Sound	
	Yes	No		Yes	No
1. Hid-Pants-Grove.....			.....		
2. Cleanse-There-Nook.....			.....		
3. Then-Dike-Use.....			.....		
4. Crash-Rub-Wheat.....			.....		
5. Not-Fuss-Rag.....			.....		
6. Tan-Perk-Our.....			.....		
7. Moose-Bait-Charge.....			.....		
8. Shoe-Pick-Rib.....			.....		
9. Wish-Five-Knock.....			.....		
10. Job-Nab-Start.....			.....		

LANGUAGE MEMORY

FRUITS

	OK	RESPONSE
1. Apple.....		
2. Orange.....		
3. Lemon.....		
4. Pear.....		
5. Banana.....		

VEGETABLES

1. Carrot.....		
2. Corn on Cob.....		
3. Head of Lettuce.		
4. Cabbage.....		
5. Beans.....		

ANIMALS

1. Rabbit.....		
2. Horse.....		
3. Cat.....		
4. Bird.....		
5. Camel.....		
6. Pig.....		
7. Cow.....		
8. Sheep.....		

WORKERS

1. Policeman.....		
2. Mailman.....		
3. Soldier.....		
4. Cowboy.....		
5. Astronaut.....		
6. Painter.....		

BODY PARTS

1. Nose.....		
2. Eye		
3. Mouth.....		
4. Hand.....		

DVORINE COLOR WHEEL

Naming Colors.....	

APPENDIX C

Project Advisory Committee Members

Dr. Warren Brown, Chairman	Associate Professor School of Education University of Colorado
Mrs. Barbara Pigford	Elementary Supervisor District No. 11 Schools
Mrs. Partick C. Gilliland	Parent
Mrs. Lowell A. King	Parent
Dr. Lewis E. Abbott	Director of the Pikes Peak Board of Cooperative Services
Mrs. Mary Cremonesi	Executive Director Association for Retarded Children
Mrs. Ann Doss	Director, Play Schools
Dr. John Kanas	Pediatrician Colorado Springs Medical Center
Dr. Glenn Shoptaugh, Jr.	Pediatrician Colorado Springs Medical Center
Miss Sharon Gillis	Project Director Head Start
Dr. Robert J. Stout	Director Diagnostic & Special Learning Center School District No. 11

APPENDIX D

FOCUS ON PRESCHOOL DEVELOPMENTAL PROBLEMS
Colorado Springs Public Schools

IDENTIFICATION SCALE

Date _____

Name of Child _____ Age _____ Date of Birth _____

School _____ Teacher _____

Attendance this year: Days Present _____ Days Absent _____

Reason for absence _____

Other schools attended this year _____

Directions: Please rate each trait in comparison with other nursery school or kindergarten-age children.

I. PHYSICAL DEVELOPMENT

A. Large-muscle development (Skipping, jumping, throwing a ball, hopping, etc.)

Very uncoordinated	Uncoordinated	Average	Skillful	Very skillful
☐	☐	☐	☐	☐

B. Fine-muscle development (Finger dexterity, eye-hand coordination, etc.)

Very uncoordinated	Uncoordinated	Average	Skillful	Very skillful
☐	☐	☐	☐	☐

C. Size

Small	Smaller than most kindergarten children	Average	Larger than most kindergarten children	Very large
☐	☐	☐	☐	☐

II. MENTAL DEVELOPMENT

A. Speech Development

1. Amount of Speech

Practically mute	Quiet	Average	Talkative	Very talkative
☐	☐	☐	☐	☐

2. Maturity of Speech

Almost incomprehensible	Many infantile speech mannerisms	Normal	Mature for Age	Very mature for age
☐	☐	☐	☐	☐

3. Bilingual Background:

Yes	No
☐	☐

B. Following Directions

Incapable of following directions	Needs constant supervision	Needs some supervision to complete tasks	Follows directions very well with minimum supervision	Always follows directions correctly and independently
☐	☐	☐	☐	☐

C. Attention

Almost impossible to get and hold	Easily distracted	Moderately attentive	Relatively undisturbed by extraneous activities	Rarely distracted
☐	☐	☐	☐	☐

D. Effort

Indifferent	Easily gives up	Has high and low periods of interest and effort	Tries most of the time	Almost always does his best
☐	☐	☐	☐	☐

E. Performance Rate

Slow and inaccurate	Slow, but fairly accurate	Average in speed and accuracy	Quick, but inaccurate	Quick, and accurate
☐	☐	☐	☐	☐

III. EMOTIONAL DEVELOPMENT

A. Stability

Often has temper tantrums	Often is shy and withdrawn	Alternates outbursts of anger and withdrawn behavior	Normal emotional control for a kinder-garten child	Extremely stable emotionally
☐	☐	☐	☐	☐

B. Self-Control

Constantly annoys other children and creates a disturbance in the classroom	Finds it very difficult to keep silent and sit still	Normal self-control for a kindergarten child	Rarely is a disturbing influence in the classroom	Always exhibits self-control
☐	☐	☐	☐	☐

C. Anxiety

Extremely ill at ease	Easily frustrated	Average social confidence	Better than average social confidence	Completely at ease
☐	☐	☐	☐	☐

IV. SOCIAL DEVELOPMENT

A. Teacher-Student Relationships

1. Cooperation (Consider responses to teacher suggestions for improvement and to teacher-initiated activities)

Hostile and uncooperative	Sometimes uncooperative	Generally good	Cooperates readily	Enthusiastic
☐	☐	☐	☐	☐

2. Behavior Towards School Property

Very destructive	Sometimes destructive	Average	Usually careful	Values prop-erty highly
☐	☐	☐	☐	☐

B. Student-Student Relationships

1. Working in Groups

Argumentative	Bothersome	Considerate of the rights of others	Kind and helpful	Solicitous of others
☐	☐	☐	☐	☐

2. Playing in Groups

Prefers to play alone	Plays with a group but often is the cause of friction for the group	Gets along well with peers	Shows leadership in group play activities	Is usually a leader in group situations
☐	☐	☐	☐	☐

Comments: (Please include mention of UNUSUAL physical defects, home conditions, etc. Is the child working with a counselor? If so, with whom?)

Teacher _____

Director or Principal _____

RM:ch
Communications
Center

COLORADO SPRINGS PUBLIC SCHOOLS

FOCUS ON PRESCHOOL DEVELOPMENTAL PROBLEMS
Thomas Hockman, Director
Dennis L. Darner, Assistant Director

PUPIL RATING FORM

Directions: Please evaluate the child whose name appears on this form and return by pony express to the Preschool Project, Stratton Annex. This pupil had been enrolled in the project class. Your cooperation is greatly appreciated.

Pupil _____ School _____ Date _____

Teacher _____ Grade _____

Key: For each trait, mark as follows:

M = Most of the time
P = Part of the time
I = Improvement needed
N/A = Does not apply

I. Reading

A. Is able to see likenesses and differences in letters _____
B. Can identify letters by name (capital and small) _____
C. Is able to discriminate sounds _____
D. Has mastery of preprimer vocabulary _____

II. Oral expression

A. Produces correct speech sounds _____
B. Uses appropriate speech patterns _____
C. Demonstrates a growing vocabulary _____
D. Expresses ideas freely and in sequence _____
E. Keeps to the subject being discussed _____

III. Handwriting

A. Forms letters and numerals correctly _____
B. Observes standards of neatness _____

IV. Mathematics

A. Recognizes numerals through ten _____
B. Recognizes shapes: circle, square, triangle, rectangle, ellipse _____
C. Counts objects in one-to-one relationship _____

V. Emotional and Social Development

A. Listens to and follows directions _____
B. Cheerfully accepts suggestions _____
C. Uses time effectively _____
D. Completes assigned work _____
E. Displays independence in work habits _____
F. Demonstrates appropriate use and care of materials and equipment _____
G. Respects rights and properties of others _____
H. Controls emotions _____
I. Cooperates in group activities _____
J. Observes standards of appropriate behavior _____

VI. Attendance

Days present _____

Days absent _____

Times tardy _____

PROGRESS REPORT

Name _____

VISUAL MOTOR

		Copying Movements			Manipulation			Constructing			Decrease Lethargy			Motoric Coordination		
		F	W	S	F	W	S	F	W	S	F	W	S	F	W	S
*Adequate	10															
	9															
Mild	8															
	7															
	6															
Moder-	5															
ate	4															
	3															
Severe	2															
	1															

PERCEPTUAL BLINDNESS

		Visual Concentration			Fine Motor Coordination			Visual Memory			Decrease Hyperactivity		
		F	W	S	F	W	S	F	W	S	F	W	S
*Adequate	10												
	9												
Mild	8												
	7												
	6												
Moder-	5												
ate	4												
	3												
Severe	2												
	1												

F= Fall (September, October, November) W= Winter (December, January, February) S= Spring (March, April, May)

LANGUAGE MEANING

		Decrease Incessant Talking			Decrease Mimicry			Expression of Emotions			Relating Socially			Voluntary Meaningful Speech		
		F	W	S	F	W	S	F	W	S	F	W	S	F	W	S
*Adequate	10															
	9															
Mild	8															
	7															
	6															
Moder-	5															
ate	4															
	3															
Severe	2															
	1															

WORD SOUND DEAFNESS

		Articulation			Auditory Memory			Attention Span			Language Development		
		F	W	S	F	W	S	F	W	S	F	W	S
*Adequate	10												
	9												
Mild	8												
	7												
	6												
Moder-	5												
ate	4												
	3												
Severe	2												
	1												

Within each severity level there is a 3-point scale: lowest no. = poor, middle no. = average, highest no. = good, with the ultimate objective t· have each child reach average performance in each particular skill.

* Adequate = adequate performance for regular classroom performance.

COLORADO SPRINGS SCHOOL DISTRICT ELEVEN
Thomas B. Doherty, Superintendent
Calvin M. Frazier, Deputy Superintendent

Special Class

Department of Research and Special Studies
Roslyn M. Grady, Director
Charles E. Hadley, Associate

ESEA Title-III

Preschool Parent Questionnaire

1. To what degree do you feel the Preschool Project staff has helped you to understand your child's learning problems?
Very much so_____Somewhat so_____None_____

2. To what degree do you feel the Preschool Project staff has helped you to help your child?
Very much so_____Somewhat so_____None_____

3. To what degree do you feel the Preschool Project staff has helped you to improve your skills to observe noticeable changes in your child?
Very much so_____Somewhat so_____None_____

4. What change, if any, have you noticed in your child's learning problems?
Much improved_____Some improved_____Not improved_____

5. What change, if any, have you noticed in your child's attitude towards school?
Much improved_____Somewhat improved_____Not improved_____

6. The conferences with Preschool Project staff have been:
Very valuable_____Valuable_____Of no value_____

7. Please list any suggestions you may have that would help to improve the program, (conferences, etc.)

8. Please indicate if this is your child's first or second year in the Preschool Project. 1st yr._____ 2nd yr._____

COLORADO SPRINGS SCHOOL DISTRICT ELEVEN
Thomas B. Doherty, Superintendent
Calvin M. Frazier, Deputy Superintendent

Department of Research and Special Studies
Roslyn M. Grady, Director
Charles E. Hadley, Associate

Preschool Project

Parent Questionaire

1. To what degree do you feel the Preschool Project staff has helped you to understand your child's learning problems?
Very much so_____Somewhat so_____None_____

2. To what degree do you feel the Preschool Project staff has helped you to help your child?
Very much so_____Somewhat so_____None_____

3. To what degree do you feel the Preschool Project staff has helped you to improve your skills to observe noticeable changes in your child?
Very much so_____Somewhat so_____None_____

4. What change, if any, have you noticed in your child's learning problems?
Much improved_____Some improved_____Not improved_____

5. How cooperative has your child been with you in the home program?
Very cooperative_____Cooperative_____Not cooperative_____

6. The conferences with the Preschool Project staff have been:
Very valuable_____Valuable_____Of no value_____

7. Please list any suggestions you may have that would help to improve the program, (conferences, etc.)

APPENDIX E

DIAGNOSTIC EVALUATION

Examined by: Dennis Darner
April 30, 1970

Date of Birth: 10-19-65

_____ was referred to the Preschool Project by Mrs. Lively, Director, Security Play School. Mrs. Lively referred _____ because she felt there was a developmental problem in that she had difficulty in following visual, as well as, verbal instructions in the activities that they do with the children at the Play School. The mother said that _____ coloring was nothing but scribbling and her cutting was very poor.

Diagnostic Examination

The examiner asked _____ some questions concerning herself and her family and she could answer these questions with no apparent difficulty. The examiner at this time asked her to stand before him and watch him closely and do the copying movements. _____ could rotate her arms in one direction correctly following the demonstration done by the examiner, but it was difficult to get her to watch closely to see the complete demonstration of rotating the arms forward and then reversing them. It was apparent with the twiddling thumb movement that she, also, had the same difficulty in that she could mesh her fingers together and rotate her thumbs one around the other, but did not look closely to see the examiner change directions of the rotating thumb movement. The examiner took her thumbs and showed her how to rotate them one way and then reverse this action. After this she had no difficulty in being able to accomplish this task. The examiner then had her walk her fingers across the table, first on her left hand and then on her right and she showed no apparent difficulty in doing this. _____ could copy the hand to fist movement, except that she did not turn her fingers the correct way until the examiner took her hand and showed her how to turn them, first against the left fist and then against the right fist. After she had been instructed in how to do this task, she had no difficulty in completing the task correctly.

The circle of the perceptual form plates was then placed before_____ and she was given a piece of paper and a pencil. She could hold the pencil correctly and at this time the examiner asked her if she could write her name and she said,"no". He then asked her to copy the form she saw on the plate before her. She had no difficulty in making the circular movement to make an average quality circle. The examiner then showed her the cross and she could copy the form of the cross both times that the examiner asked her to do the task. It was apparent that she began having difficulty when the form involved corners and points, such as: square, triangle, and divided rectangle. She wanted to make the corners round and did not want to look closely at the form before her to copy these other three forms. The triangle was made with a point at the top, but rounded corners where the diagonal lines and the base line joined. Through instruction on the triangle she could draw lines between the dots that were made for her as long as the examiner forced her to look closely at the visual instruction he was giving her. This was apparent on the square and divided rectangle also. She did not want to look closely at the form, but wanted to make scribbling marks for each of these forms until the examiner forced her to follow the visual instruction given to her in drawing lines between the dots made for her to complete the task. When she was left on her own to do these tasks, she again reverted back to making rounded circles and scribbley lines instead of the correct lines she was shown. It was felt that she could see the forms that were placed before her and through visual forcing, she could be made to do these forms correctly. These tasks were hard for her and it required close visual attention in being able to copy them.

Evaluation--Continued

The spinning sparkler was then demonstrated for _____ and placed before her. She picked it up but had difficulty in putting her fingers around the holder and her thumb on the plunger. The examiner demonstrated it once again for her and at this time she picked it up properly, put her fingers around the holder, her thumb on the plunger and made it operate with no apparent difficulty.

The head, tail and four legs of the horse puzzle were removed and the puzzle placed before _____. She was asked what the puzzle appeared to be and she said it was a "horse". The examiner held up each piece and she could point to the correct opening in the puzzle for the head and tail but when she came to the legs of the horse, it was apparent that she did not look closely to discriminate the rounded and pointed parts of the legs from the straight pieces. The examiner visually showed and told her that some of the pieces had crooked sides and some straight sides and that she must look closely at the openings to determine where each piece fit. At this time, she could discriminate the crooked pieces from the straight pieces but still had difficulty in getting them in the correct openings. The examiner at this time took the head, tail, and four legs out of the horse puzzle and at this time placed all of the pieces in front of _____ and asked her to complete the task. She managed to fit the head and tail in the puzzle with no apparent trial and error. Again, when she came to the legs of the horse puzzle, she experienced difficulty in discriminating the crooked legs from the straight legs. She could discriminate these when she was required to look more closely and tell the examiner where each of these pieces fit in the openings for the legs of the horse puzzle.

The examiner then took the four pieces from the pure form puzzle and placed the empty box before her. She managed to fit the larger piece in correctly but had much difficulty in selecting the next piece until the examiner asked her which piece had the large rounded piece on it. Immediately, she pointed to the correct piece and picked it up and fit it in correctly. She showed extreme difficulty in being able to find the next two pieces and showed much trial and error in being able to fit these pieces in properly. At this time the examiner would give her brief, short verbal commands such as: turn it over or turn it around and she could follow these commands correctly to complete the puzzle. She would pick up the correct piece to fit it in but did not realize that it had to be turned over or turned around to fit. The examiner then took the pieces out once again and placed them all before her. On this second attempt at placing the pieces in the puzzle she did not experience nearly the difficulty she did the first time and needed very little verbal or visual instruction in completing this task. It was apparent that she did learn through the verbal as well as the visual channel in being able to complete this task of putting the pure form puzzle together. It was also apparent that she did not look closely at the pieces to see that they needed to be turned over or around to fit into the puzzle correctly.

The spinning egg was then demonstrated for _____ and placed before her. She showed difficulty in remembering the demonstration that had been done for her with the spinning sparkler. She needed to be again asked to look closely and watch the examiner put his two fingers on the holder and his thumb on the plunger to make it operate properly. On the second attempt at operating the spinning egg she did put her fingers around the holder and her thumb on the plunger and made it operate properly. It was difficult to make it spin quickly because she did not have extreme strength in her hand and thumb to make it operate quickly. The examiner told her it had to be pushed very hard to make it spin quickly and at this time she did push much harder and made the egg spin quickly so that she could see what was inside. She said it looked like a "little duck".

The nest of eggs was then shown to _____ and the examiner took the eggs apart and mixed them up and placed them before her. It was apparent that she had much difficulty in selecting the next size larger piece to fit in the egg correctly. She even had difficulty in trying to put the exact size half pieces of the eggs together. The examiner at this time took the eggs apart again and put them in order for her, smallest through largest. She then began putting the eggs together and the examiner had to say several times that the one she selected was not the correct egg and he at this time would point to the correct next size. By visually helping her and pointing to the correct size, she managed to complete the task. On the next attempt at the eggs she did improve on her ability to make correct selections in putting the smaller eggs in the larger eggs. She did not have to be told to turn the eggs correctly so that rounded ends went into rounded ends and pointed ends into pointed ends. These she managed to fit together correctly without any help from the examiner. It was quite apparent that she had to be forced to look closely to see that one egg was larger than the other and that they had to all fit inside of each other to make the one large egg.

The magnetic mouse game was then demonstrated for _____ and she was asked to make the mouse move around the game upon commands given to her by the examiner. She did have difficulty in being able to manipulate the mouse around and wanted to look under the game constantly to see where the magnet was. The examiner guided her hand and showed her how to move the mouse through the boot and at this time she did not have any difficulty in being able to move the mouse on her own.

The small circle of the geometric shapes was then placed before _____ and she was asked to put the semicircle and two quadrants together to make the circle like the one placed before her. She showed no difficulty with this task and managed to fit the two quadrants against the semicircle correctly to make it look like the circle before her. When she was asked the second time to do this task, she had no difficulty.

The examiner then asked _____ to pretend her finger was a car and make her finger travel over the road embedded in the Dvorine Color Plates. _____ told the examiner that her finger was not a car but a finger. So at this time the examiner asked her to take her finger and travel over the road embedded in the Dvorine Plates. _____ was becoming tired at this point and did not want to trace her finger over the tracing lines embedded in the color of the Dvorine Color Plates. She did a fair job on the first color plate where the embedded line color was obvious, but on the rest of the color plates she had extreme difficulty and showed much frustration. When the colors became very closely the same, she could not discriminate one from the other and refused to continue the task.

_____ showed the same difficulty when she was asked to select on the the discrimination cards of geometric shapes from the four simpler cards placed before her. The examiner forced her to look at the cards and she did pick out three of the cards correctly, but only after much visual and auditory instruction by the examiner. She had to be told which ones looked alike and which ones did not look alike, and only then with close guidance could she make correct selections. She did not enjoy doing this task and became very frustrated because this was very difficult for her to do; however, she could make selections when she was forced and pressured to do so. The houses of the discrimination cards were not used at this time because it was very apparent that she had much difficulty doing fine visual discrimination.

It is apparent at this time that _____ does suffer deficit behavioral symptoms of a severe perceptual blindness disability and that she does not want to attempt tasks that require her to look closely.

The one-word spondees were then given to _____ and she could repeat these words. The two-word spondees were then given to her and she could repeat these words back also. _____ displayed good speech only having some distortion on the "r" sound. When she was asked to repeat the three-word spondees she did not want to attempt these and became very fidgety and wanted to quit the evaluation. She walked to her mother several times and it was very difficult for the examiner to get her to repeat any of the three-spondee words. It is not felt at this time that it was because she could not repeat these words, but that she did not want to continue this task because she was tired.

The examiner then asked _____ to name the colors on the Dvorine Color Wheel and she had much difficulty naming these colors. The examiner used lip reading with her and had extreme difficulty in having her pay attention to his lips because of the difficulty she has in close looking. He did manage to get her to lip read two or three of the colors and she was able to remember at this time what they were called and tell him what they were. She again wanted to move to her mother and began to whimper and did not want to continue this task.

The examiner then took out the pictures for language memory and managed to get her to look at these long enough to tell him what they were. She did an extremely good job in naming these pictures and of the fruits missed only one, which she named back to the examiner after it was lip read to her. She named all of the vegatables, animals, workers, and body parts correctly with no apparent difficulty in remembering what these were called. The examiner then managed to get her to repeat three one-syllable words at a time that he made up and she had no difficulty in being able to repeat these one-syllable words back to him three at a time. He managed to get her to put the amplified sound headset on and found that a comfortable level was 110 sound pressure level. It was noticeable that she paid better attention and she was more willing to repeat back the three words at a time that he made up for her.

It is possible that _____ does suffer deficit behavioral symptoms of a very mild word sound deafness but it is not very apparent at this time.

Teaching Recommendations

It is felt that _____ does need help in the Preschool Project and will be enrolled in one of the special classes in the Fall of 1970. The mother will be instructed in how to help _____ to overcome the deficit behavioral symptoms of the severe perceptual blindness as well as the mild symptoms of the word sound deafness. The mother was instructed to use very simple pictures that she makes, such as: house, car, triangle, square, circle and have _____ color these with the mother's guidance. She was also instructed in how to make straight, wavy, and peaked lines to have _____ cut on. It was recommended that the mother guide _____ hand while she is cutting on these lines. It was recommended, also, to make these lines very dark and broad so they are easy for her to see. She was also instructed in how to use lip reading with colors to help her improve her auditory memory of colors. Further instructions and guidance will be given to the mother when she appears for a conference in one week.

Focus on Preschool Developmental Problems
Teacher: Miss Margene Bower
Asst. Director: Dennis L. Darner

April 20, 1971

I. Disability

The diagnostic evaluation done on April 30, 1970, reveals that _____ suffers from a severe perceptual blindness disability. This means that she has difficulty looking closely in activities that require fine visual discrimination. Because of her poor auditory memory, there is the possibility that _____ suffers from a very mild word sound deafness disability.

II. General Goals

A. Learn to use her eyes for activities involving fine visual discrimination (look closely)

B. Improve auditory memory

C. Learn to accept responsibility for completing tasks given her

D. Learn to relate to the other children

III. Specific goals and treatment

A. Learn to use her eyes for activities involving fine visual discrimination

1. To help _____ learn to cut and color properly we used physical guidance to help her feel the correct coloring motion. Along with this we used verbal instruction which has been successful in improving _____ cutting and coloring skills. We have, also, had her cut along heavy black lines and color simple pictures. These skills have improved but she needs continued work for further improvement.

2. Patterning has been used to help _____ learn to discriminate visually. At first the models were very simple, only 2 or 3 pieces. As her skill improved, the complexity of the models has been increased to 6 and 7 pieces. She is beginning to use her eyes much better for visual discrimination.

3. An "office" was constructed which shuts out distractions from three sides. This has helped her learn to concentrate on her work.

4. Lotto games have been successful in helping _____ use her eyes more effectively for visual discrimination.

B. Improve Auditory Memory

1. The language master has been effective in helping _____ learn her colors and numbers.

2. Lip reading has helped her in tasks involving use of auditory memory.

3. Simple stories have been read to her and questions asked about the content to help her learn to listen and to improve her auditory memory

She appears to enjoy stories and her auditory memory is fair.

4. The controlled reader has been used to help _____ learn and remember the names of specific pictures. The ones she doesn't know must be repeated several times before she can remember them consistently.

C. Learn to accept responsibility for completing tasks— At first it was very difficult to get _____ to do anything and she would cry if she could not have her own way. She often appeared tired, her balance was unsteady, and she was easily upset.

1. While talking with the mother we discovered that _____ was on medication. It was suggested that this be decreased, and there was a noticeable change in _____ behavior. She appeared brighter and more alert, and was more cooperative, although she still became easily upset.

2. To get _____ to do the task she was given, the 1-2-3 technique was used. If she hadn't started on the task by the time I counted to 3 she was asked to sit on a chair until she was ready to join us. This proved to be a very effective technique and only needed to be used a few days. Now _____ will usually work on a task willingly.

3. _____ was moved to the morning class and she has adjusted very well to being with the older children. Her desire to enter into activities appears greater with this group.

4. _____ still has difficulty concentrating on what she is doing. She often watches the other children and must be reminded to finish her work. The wooden "office" has helped _____ concentrate because it cuts out distractions from three sides.

D. Learn to relate to the other children

1. Free play time has been a good opportunity to help _____ learn to relate positively to the other children. One of her main problems is in the area of sharing. We have used a timer with a bell to let her know when it is someone else's turn to play with certain materials. This has been effective and _____is usually willing to take turns.

2. Working with 1 or 2 other children on an activity has helped _____ learn to get along with others. She now relates fairly well to the other children.

IV. Prognosis

A. Increased ability to concentrate

B. A little more intellectual control over distractions

C. Learning to read and spell

D. Increased interest in visual motor activities and in purely visual activities.

Prognosis--Continued

E. Increase in word recognition and understanding of commands

F. Improvement of auditory memory

May 28, 1971

Visual discrimination - In the past month _____ has shown improvement in activities requiring visual memory. She is beginning to recognize numerals and to print some of the letters in her name. Her visual concentration is still poor and she is easily distracted. Other visual skills remain about the same, such as patterning, assembling models, and coloring.

Auditory skills - _____ auditory skills have changed little in the past month. Her auditory memory is good and she can discriminate sounds quite well. She has a fairly good grasp of language concepts and her language development is good.

_____ is still stubborn when asked to do something she doesn't want to and will sometimes scream and cry. She doesn't become upset quite as often as she used to, and her behavior varies from day to day.

RE-EVALUATION

_____ Examined by: Dennis Darner
Date of Birth: 10-19-65 February 29, 1972

The copying movements of rotating arms, twiddling thumbs, hand to fist and walking fingers were demonstrated for _____ and she showed no difficulty in being able to copy these movements. However, they could have been done better, had she not done them so quickly.

The perceptual form plates of the circle, square, triangle and cross were presented to _____ and she was rated high on her performance of copying these shapes.

The spinning sparkler was demonstrated for _____ and she was able to pick it up properly and make it operate correctly.

The head, tail and four legs were removed from the horse puzzle. She was able to place the pieces back in the puzzle, but still showed signs of careless looking on legs of puzzle.

The four pieces were removed from the four piece pure form puzzle. She showed definite signs of careless looking when putting these pieces back into the puzzle, and needed visual guidance to complete this task.

_____ was able to pick the spinning egg up properly and make it operate correctly.

_____ was asked to assemble the nest of eggs according to size, shape and color. She made only one error on this task and was able to correct it on her own.

_____ was able to take the mouse to the objects and through the boot on the magnetic mouse game.

The geometric shapes of the large and small circles were presented to _____ She showed no apparent difficulty in assembling the quadrants to look like the sample circles shown to her.

The Dvorine Color Plates were presented to _____. She had difficulty tracing the lines when the colors were closely the same. She traced the lines on 5 of the 8 plates.

The discrimination cards of geometric shapes were used with _____ and she made 11 correct choices from the 12 cards shown to her. She made 12 correct choices from the 12 cards of houses. She was rated high on this task.

_____ repeated all the one word spondees at a time. She repeated 8 of the 10 sets of two spondee words at a time. She repeated only one set of the three spondee words at a time. _____ repeated the 10 sets of three phonetically balanced words at a time.

_____ named all the pictures for language memory except beans and cabbage. She named these pictures on second and third attempts.

_____ knew all the colors on the Dvorine Color Wheel except grey and could name this on the second attempt.

Conclusion

_____has made significant gains in overcoming the deficit behavioral symptoms of perceptual blindness and word sound deafness.

There still are some signs of the perceptual blindness, as was apparent from her performance on the puzzles, perceptual form plates and tracing lines on the Dvorine Color Plates. She still needs to be forced to use her eyes more effectively with close looking activities.

It is also felt that _____ needs improvement in auditory memory as was apparent on her recall of the spondee words. Amplified sound and lip reading should continue to be employed with _____ to help her improve her auditory memory and listening.

_____ self control has greatly improved, along with her ability to complete tasks begun.

_____--Continued Progress April 28, 1972

Visual discrimination - _____ has been doing very well on tasks involving visual discrimination. Her ability to concentrate on these tasks has improved. Fine motor coordination is good and her work is visually neatly done.

Auditory Skills - _____ auditory skills have improved greatly since she entered the Preschool Project. Her auditory memory is very good, as is her use and understanding of language.

The most significant improvement has been in _____ behavior. She used to be very stubborn and was easily upset. There are still times when she cries if she doesn't get her own way, but most of the time _____ is very happy and cooperative.

PROGRESS REPORT
1971-72

Name _____

VISUAL MOTOR

Average		Coping Movements F	W	S	Manipulation F	W	S	Constructing F	W	S	Decrease Lethargy F	W	S	Motoric Coordination F	W	S
Mild	9															
	8															
	7															
Moderate	6															
	5															
	4															
Severe	3															
	2															
	1															

PERCEPTUAL BLINDNESS

Average		Visual Concentration F	W	S	Fine Motor Coordination F	W	S	Visual Memory F	W	S	Decrease Hyperactivity F	W	S
Mild	9												
	8												
	7												
Moderate	6												
	5												
	4												
Severe	3												
	2												
	1												

F= Fall (September, October, November) W= Winter (December, January, February) S= Spring (March, April, May)

LANGUAGE MEANING

Average		Decrease Incessant Talking F	W	S	Decrease Mimicry F	W	S	Expression of Emotions F	W	S	Relating Socially F	W	S	Voluntary Meaningful Speech F	W	S
Mild	9															
	8															
	7															
Moderate	6															
	5															
	4															
Severe	3															
	2															
	1															

WORD SOUND DEAFNESS

Average		Articulation F	W	S	Auditory Memory F	W	S	Attention Span F	W	S	Language Development F	W	S
Mild	9												
	8												
	7												
Moderate	6												
	5												
	4												
Severe	3												
	2												
	1												

Within each severity level there is a 3-point scale: lowest no. = poor, middle no. = average, highest no. = good, with the ultimate objective to have each child reach average performance in each particular skill.

PROGRESS REPORT
1970-71

Name AO

VISUAL MOTOR

Average		Coping Movements F	W	S	Manipulation F	W	S	Constructing F	W	S	Decrease Lethargy F	W	S	Motoric Coordination F	W	S
Mild	9															
	8															
	7															
Moderate	6															
	5															
	4															
Severe	3															
	2															
	1															

PERCEPTUAL BLINDNESS

Average		Visual Concentration F	W	S	Fine Motor Coordination F	W	S	Visual Memory F	W	S	Decrease Hyperactivity F	W	S
Mild	9												
	8												
	7												
Moderate	6												
	5												
	4												
Severe	3												
	2												
	1												

F= Fall (September, October, November) W= Winter (December, January, February) S= Spring (March, April, May)

LANGUAGE HEARING

Average		Decrease Incessant Talking F	W	S	Decrease Mimicry F	W	S	Expression of Emotions F	W	S	Relating Socially F	W	S	Voluntary Meaningful Speech F	W	S
Mild	9															
	8															
	7															
Moderate	6															
	5															
	4															
Severe	3															
	2															
	1															

WORD SOUND DEAFNESS

Average		Articulation F	W	S	Auditory Memory F	W	S	Attention Span F	W	S	Language Development F	W	S
Mild	9												
	8												
	7												
Moderate	6												
	5												
	4												
Severe	3												
	2												
	1												

Within each severity level there is a 3-point scale: lowest no. = poor, middle no. = average, highest no. = good, with the ultimate objective to have each child reach average performance in each particular skill.

APPENDIX F

ANALYSIS OF IQ DATA BY DIAGNOSED DISABILITY

ANOVA TABLE*

Source	Sum of Squares	D.F.	Mean Square	F
Between Subjects	15,901.17	11		
Diagnosed Disability	1,832.54	2	916.27	.59
Subjects within Groups	14,068.62	9	1,563.18	
Within Subjects	4,820.50	36		
IQ Gain	800.33	1	800.33	18.32
Disability x Gain	33.04	2	16.52	.38
Within Gain	393.12	9	43.68	
Verbal/Performance	18.75	1	18.75	.06
Disability x Verbal/ Performance	378.37	2	189.19	.64
Within Verbal/ Performance	2,665.37	9	296.15	
Gain x Verbal/ Performance	80.08	1	80.08	1.92
Disability x Gain x Verbal/Performance	75.54	2	37.77	.90
Within Gain x Verbal/ Performance	375.87	9	41.76	
Total	20,721.67	47		

* Split plot analysis of variance - One between measure (disability) and two within measures (pretest/posttest, verbal/nonverbal IQ). See Roger E. Kirk, Experimental Design: Procedures For the Behavioral Sciences. Wadsworth Publishing Co. Inc., 1968, 298-307.

ANALYSIS OF IQ DATA BY TYPE OF INSTRUCTION

ANOVA TABLE*

Source	Sum of Squares	D.F.	Mean Square	F
Between Subjects	15,954.29	20		
Type of Instruction	5,654.86	2	2,827.43	4.94
Subjects within Groups	10,299.43	18	572.19	
Within Subjects	7,927.00	63		
IQ Gain	1,981.71	1	1,981.71	30.54
Instruction x Gain	168.29	2	84.14	1.30
Within Gain	1,168.00	18	64.89	
Verbal/Performance	165.76	1	165.76	.85
Instruction x Verbal/ Performance	27.81	2	13.90	.07
Within Verbal/Performance	3,513.43	18	195.19	
Gain x Verbal/Performance	23.05	1	23.05	.50
Instruction x Gain x Verbal/Performance	48.67	2	24.33	.53
Within Gain x Verbal/ Performance	830.29	18	46.13	
Total	23,881.29	83		

*Split plot analysis of variance with one between groups measure (type of instruction) and two within groups measures (pretest/posttest, verbal and performance IQ). Roger E. Kirk, op. cit.

COMPLETE FACTOR ANALYSIS SOLUTION

Variable	Factors I	II	III	IV	V
1. Large muscle development	-.0376	.0165	.2616	.1184	.8599
2. Fine muscle development	.5339	-.0722	.3452	.3526	.3754
3. Size	.0904	.1000	-.0397	.8932	.0463
4. Speech development	.0676	.8559	-.1321	.0637	.0099
5. Maturity of Speech	.2840	.5324	.4904	.3668	.1453
6. Not considered	--	--	--	--	--
7. Following directions	.8298	.1236	.3026	.1102	.0807
8. Attention	.6920	-.1346	.5342	.1453	-.1066
9. Effort	.7017	-.0664	.5493	.0809	-.1547
10. Performance rate	.7144	.4468	.0417	.0552	-.0603
11. Stability	.6509	.1807	-.1294	-.1917	.4859
12. Self-control	.4280	-.4272	.6211	-.0856	.0640
13. Anxiety	.3070	.2773	.5954	-.1477	.1834
14. Cooperation	.0470	-.0688	.8571	.2295	.1305
15. Behavior towards school property	.1367	-.0444	.8182	.0286	.0379
16. Working in groups	.2479	-.1636	.7687	-.0233	.1311
17. Playing in groups	.1598	.4169	.6527	-.1170	.1070

APPENDIX G

COLORADO DEPARTMENT OF EDUCATION

Expenditure Report for Title III ESEA Funds (Annual) Final

NAME & ADDRESS OF AGENCY Colorado Springs Public Schools
1115 N. El Paso, Colorado Springs, Colorado 80903

GRANT NUMBER 15-69-0014-2

BUDGET PERIOD (Mo., Day, & Year) Beg: 7-1-71 End: 6-30-72

SIGNATURE David K. Eberhart
Project Fiscal Officer David K. Eberhart

EXPENDITURE ACCOUNTS FUNCTIONAL CLASSIFICATION	Acct. No.	Salaries Professional	Salaries Non-Professional	Materials and Supplies	Contracted Services	Travel	Equipment	Other Expen.	Expenditure Totals
1	2	3	4	5	6	7	8	9	10
1. ADMINISTRATION	100	2,353					XXXXXX XXXXXX	269	2,622
2. INSTRUCTION	200	34,719	11,579	1,627		788	XXXXXX XXXXXX		48,713
5. PUPIL TRANSPORTATION SERVICES	500						XXXXXX XXXXXX	1,188	1,188
6. OPERATION OF PLANT	600						XXXXXX XXXXXX	170	170
8. FIXED CHARGES	800						XXXXXX XXXXXX	6,607	6,607
EXPENDITURE TOTAL		37,072	11,579	1,627	-	788		8,234	59,300

Amount authorized for expenditure for budget period(s) shown above (Grant award(s) less carry over funds) $ 59,300

Funds carried over into new project year or, if final report, unexpended funds (please remit) $ -0-

APPENDIX G

COLORADO DEPARTMENT OF EDUCATION

Expenditure Report for Title III ESEA Funds — Annual (Final)

NAME & ADDRESS OF AGENCY	GRANT NUMBER	BUDGET PERIOD (Month, Day & Year)
Colorado Springs Public Schools 1115 N. El Paso, Colorado Springs, Colorado 80903	15-69-0014-2	Beg: 5-1-69 End: 6-30-72
SIGNATURE Project Fiscal Officer — David K. Eberhart David K. Eberhart		

EXPENDITURE ACCOUNTS FUNCTIONAL CLASSIFICATION	Acct. No.	Salaries: Professional	Salaries: Non-Professional	Materials and Supplies	Contracted Services	Travel	Equipment	Other Expen.	Expenditure Totals
1	2	3	4	5	6	7	8	9	10
1. ADMINISTRATION	100	15,417					XXXXXX XXXXXX	269	15,686
2. INSTRUCTION	200	118,269	28,013	4,424		2,315	XXXXXX XXXXXX		153,021
5. PUPIL TRANSPORTATION SERVICES	500						XXXXXX XXXXXX	2,370	2,370
6. OPERATION OF PLANT	600						XXXXXX XXXXXX	550	550
7. MAINTENANCE OF PLANT	700				114		XXXXXX XXXXXX		114
8. FIXED CHARGES	800						XXXXXX XXXXXX	19,602	19,602
12. REMODELING ($2,000 or less)	1220c		435	326			XXXXXX XXXXXX	995	1,756
13. CAPITAL OUTLAY (Equipment Only)	1230	XXXXXX XXXXXX	XXXXXX XXXXXX	XXXXXX XXXXXX	XXXXXX XXXXXX	XXXXXX XXXXXX	5,160	XXXXXX XXXXXX	5,160
EXPENDITURE TOTAL		133,686	28,448	4,750	114	2,315	5,160	23,786	198,259

Amount authorized for expenditure for budget period(s) shown above (Grant award(s) less carry over funds) $ 198,259

Funds carried over into new project year or, if final report, unexpended funds (please remit) $ -0-